THE AMERICAN FARMER,

SPIRIT OF THE AGRICULTURAL JOURNALS OF THE DAY.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . *Virg.*

Vol. II. BALTIMORE, DECEMBER, 1846. No. 6

WORK FOR DECEMBER.

Having arrived at the opening of the last month in the Calendar, it may be profitable to take a retrospective view of our farm operations during the preceding part of the year. By scrutinizing what we may have done; by looking closely into all our proceedings connected with our business; by comparing results, by minutely examining into the various modes of culture pursued by us, as well as those adopted by us in our improvement of the soil, and noting the cost and effects produced, we may not only be able to arrive at something like a definite opinion as to the value of our labors, but discover wherein those labors have been fruitful, or barren of reward; detect errors if any may have been committed, and correct them in the future. By resorting to this retrospection, if we will bring to our aid that critical observation which long practice qualify us to make; we may be enabled to improve upon our former modes, and thus introduce a more judicious system of culture; one having for its object the melioration of the soil upon those principles of agricultural physiology and enlightened economy, which look alike to the permanent improvement of the arable land, and the securement of the greatest amount of good with the least expenditure of labor and means. These objects should always be held in active appreciation by all husbandmen who desire to be successful, as it is of a truth that there is no class of society more dependent upon the exercise of far-sighted economy than they for the acquisition of those elements of wealth, which vouchsafe comfort to the homestead. In speaking of *economy*, we do not mean that contracted kind that would shut the door against that generous hospitality which bring neighbors together upon the broad platform of brotherhood, and impart to life its most enchanting charms, but that *true economy* which husbands means and directs them to noble ends—which in the application of fertilizers adapts them to the peculiar necessities of the soils of our several fields—which takes pains to discover what those necessities are,—which garners up *manure* from every available source and preserves it from the deteriorating effects of the weather, and which, in the *setting* and *cultivation* of our crops, are always timely and never out of season.

These reflections appear opportune to the occasion, and we have been tempted to present them in the hope that they may serve to set our brethren to thinking; and having made them, we shall proceed to point out a few of the many things which should be attended to

On the Farm.

Sheep.—As the wool business has become a very important branch of American husbandry, and is competent of being made much more so unless destroyed by the suicidal policy of our law makers, we shall give a few brief directions with regard to the "winter management" of sheep. And in what we shall say we wish it distinctly understood that we are only presenting a brief abstract of those rules laid down in that most able work, "*The American Shepherd*," published in 1845, by L. A. Morrell, who is himself one of the most enlightened sheep breeders in the country, and whose book should be in the possession of every agricultor in the country, as without doubt, it combines more true philosophy connected with the rearing and management of sheep, and more of those unerring results arising from practical knowledge, than any other volume ever printed.

Necessity of Protection.—There is nothing, says the author, appertaining to sheep economy, more generally neglected than the provision of ample and warm accommodations for shelter, and from no other cause does such large losses accrue. It is rigidly practised in Prussia, Germany, Scotland and the northern parts of England; and every sheep historian recommends it. So indispensable is it held, that the author of a Scotch work upon the subject, lays down this emphatic rule:—"Shelter is the first thing to be attended to in the (winter) management of sheep"—a rule, whose common sense must commend it to the adoption of every sheep owner. While every good shepherd is decidedly hostile to their being confined

or to their being forced into shelter, whether they wish it or not, it cannot be too strongly recommended to all sheep farmers, to put the means of avoiding the severity of stormy weather within the reach of their flock at all times. To illustrate the *advantage of shelter*, our author adduces the example of Mr. Spooner's experience, which we will give in his own words. He says:

"Until within the last ten years, the writer's flocks, like thousands of others at the present time in this and other states, were denied the benefits of shelters; and the loss, in proportion to the severity of winters, varied from 5 to 10 per cent. The diseases caused by their exposure were such as *scab, pelt, rot, dysentery*, and *colds*, which caused an excessive discharge of *mucus* from the nostrils, while many died from no other cause, apparently, than sheer poverty of condition Since, however, his sheep have been protected, the deaths have not exceeded *one and a half per cent.* in regard to *number*, and if comparative value were the standard, it would not be considered of any moment, as the loss has been mostly among diminutive spring lambs—so from bad nursing, and old ewes which, from superiority of fleece or carcase, were retained thus long, to breed from."

Protection materially *increases the weight of the fleece and improves its quality*. The comforts of shelter enables the animal the better to retain its flesh, as also, to receive accessions, and as a consequence, to increase its fleece, as the secretions which produce flesh and the fluids which impart growth to the wool all proceed from the same source. But as facts are more reliable than theory, we will state that the flock of the writer increased in weight of fleece, *by shelter*, from 2 lbs. 5 oz. to 2 lbs. 9 oz. to 3 lbs. 2 oz., making an aggregate difference in the weight of the wool of his flock of 2000 pounds. The wool too is greatly improved in softness, as also in the soundness and evenness of the fibre, properties which tend much to enhance its value in the market.

The superior condition of the ewes, induced by he comforts of shelter, *materially increases the number of the lambs*.

Shelter saves provender, as animals consume less food when kept in comfortable quarters than when exposed to the inclemency of the weather; under the latter circumstances a large portion of their food, by the law of necessity existent in animal economy, being appropriated to purposes of heat, which under the former condition would have gone to the production of flesh, muscle and fat.

Feeding.—Hay is the standard of sheep-feeding, and it is presumed that sheep which receive daily, per head, 3 lbs. of first quality hay, or its equivalent in that and other food, can be subsisted in a healthful wool and milk producing state. The large long wooled sheep require more food than the small fine wooled ones. While the *former* would require from 3 to 3½ lbs. of hay, or its equivalent in other food, the *latter* may be subsisted upon 2 to 2½ lbs. of hay, or its equivalent, per head, the rule being that 2½ lbs. of hay is required to support, daily, every 100 lbs. live weight. The feed of sheep may be varied as follows, and they be benefitted by the change of diet, as—

Hay, 3 lbs per day, for a week
Hay 1¾ lbs. 1 lb. Potatoes per day, another week. or
Hay 1 lb. 2 lbs. Potatoes per day, for the third week.

These several daily allowances to be divided into three parts and fed out, say, in the morning, at day break, at noon and in the evening, just before sunset. If other vegetables should be substituted for potatoes, as cabbage, turnips, or Swedish turnips, the same weight will answer. If the common white turnips be, it will require double the weight. If beets be substituted, ½d more in weight must be given.

If *straw* be substituted for *hay*, it will require thrice the quantity, and it should be chopped and moistened with water, and mixed in with the vegetables.

There are various other articles of food named in the tables, but as they are not grown in this country we have omitted naming them. *Oat* and *Barley* straw are preferred to those of wheat and rye.

The *stalk* of *Indian corn*, cut fine, is very nutricious food for sheep—so also are corn-cobs ground fine and moistened.

Beans ground into meal, and mixed with chopt hay or straw, in the following proportions make an excellent wool-producing provender. ½ lb. Bean meal, 2 lbs. Hay—or ½ lb. Bean meal and 3 lbs. straw.

Buckwheat straw, when carefully cured, is recommended for sheep—so also is *millet hay*.

If *Barley*, or *Oats*, be fed to sheep, a half pint of either grain may be substituted for 1 lb. of hay—but each of these grains should be chopt and moistened and mixed with cut hay or straw as the case may be.

What food will produce the most wool?—Peas and *beans*, corresponding more with the elements of fat than the various grains, are better adapted to the production of wool, than either wheat, corn, rye, barley, oats or buckwheat. These latter, together with the Ruta Baga turnip being peculiarly adapted to the production of fat should be used mostly for the feed of sheep when undergoing the process of fattening.

Overfeeding should not be resorted to, as it deteriorates the quality of the wool—the best, finest and softest wool is always produced where the sheep is kept in a healthy condition, fed regularly at stated hours, but not in excess.

The *quality of hay* is an object. If *coarse*, much of it will be rejected by sheep, say to the extent of from 10 to 25 per cent.; so, therefore, to obviate the necessity of making allowance for such loss, care should be taken to provide hay of a *fine* quality. *Twenty tons* of good hay would carry 100 head of sheep through the winter in excellent health and condition.

Importance of Green Food.—The feeding of green food, such as *potatoes, apples, turnips, &c.* are deemed

essential to the health of the sheep. Confinement wholly to dry food does not comport with that variety of condiment, which has so frequently been urged; and consequently is followed by the disorganization of the digestive functions, producing *costiveness* and the disease called the *stretches*. *Pine bows* should once a week be given them. Besides preventing the occurrence of *costiveness* and the *stretches*, green food tends to increase the *wool* and *yolk* secretions, and to impart elasticity, soundness and softness to the fleece, maintains the sheep in health, improves his condition, and augments the quantity of wool.

Water necessary.—To enable the sheep to provide himself with *saliva* to assist him in the process of rumination he should be daily allowed water to drink.

Management of Lambs.—At the beginning of this month, the lambs should receive a portion of meal of some kind, daily, say, in the proportion of a peck to 100 head; about the middle of the month this quantity may be increased to ½ a bushel. To induce them to eat potatoes, the meal should be sprinkled over them. Half a bushel of potatoes given twice a week will be about the right quantity, which must in addition to the meal receive a sprinkling of salt. These messes must be understood to be in addition to their allowance of hay.

Management of two year olds.—Sheep of this age require as much food as the matured ones, and should receive similar attention.

Management of Breeding Ewes.—The course of management will depend on the *time of yeaning*. At least a month before this period is to arrive, they should receive liberal allowances, daily, of Potatoes, for the assimilation of milk; to the Potatoes a little wheaten shorts mixed with a little barley, or oatmeal should be added.

Mode of Foddering.—All hay and long fodder should be fed from racks.

Salting.—Sheep should have salt given them at least thrice a week. Indeed, if they had daily access to it in a trough under cover, it would be better. And where pine bows are not to be had conveniently, a mixture of tar and salt should be placed in a trough.

Fattening Hogs.—It is important that your hogs now being fattened should be regularly fed at stated times of the day, say at 7 o'clock in the morning, 12 o'clock noon, and just before sundown. Their pen should be provided with dry, warm sleeping apartments where they may retire and rest after each meal; quietness being a condition that is very conducive to the generation of fat in the hog. And as you should be looking ahead for a goodly pile of manure, for the improvements of next spring, don't fail to supply your hog pen most liberally with mould and leaves from the woods, weeds, and indeed every substance which can be converted into manure.

Keep the pens well supplied with charcoal or rotten wood, and occasionally throw into their troughs tub of soap-suds.

Breeding sows, store hogs and pigs.—Attend to these—see that they have comfortable sleeping apartments, and don't omit to feed them moderately well—particularly the two latter kinds, as unless provided with stomach-timber their bodies cannot be expected to grow.

Milch Cows.—If these be fed upon dry hay it cannot be expected of them to give full supplies of milk, for without succulent food the udder cannot, except upon a limited scale, carry on its milk secreting operations. In view of these facts every farmer should make it a part of his business to raise a sufficient quantity of beets, carrots, and parsnips, to give each milch cow on his farm half a bushel daily from the 1st of December till the first of May.

Working Horses and Oxen.—Increase your attention to these animals—feed them generously, curry and brush them daily, and give them straw to lie upon and they will give you more labor, more and better manure.

Colts, and young cattle.—These should have comfortable warm sheds, facing the south, to retire in at their pleasure from the inclemency of the weather. Without being stuffed they should receive a sufficiency of food to keep them in fine growing condition. Their yards should, of course, be separate.

Fire Wood.—Be sure to have a full supply of firewood hauled in, to last you until the first of May, before the road to the woods gets bad.

Fencing.—If your fences need renewing or repairing, seize every spare moment to cut down and shape into form as many posts and rails as you may require. As these may be cut in the woods, have them hauled into your barn-yard, so that your hands may be employed during the wet days of winter in preparing them for spring use.

Gates.—If each of your fields is not already provided with a good gate, have them made, as the loss of time occupied in taking down and putting up bars in a single year is equal to the cost of a gate—and besides neat well hung gates are so many evidences of a good farmer.

Orchard.—If the bark of your apple trees are rough and present a dead-like appearance, have it scraped off and paint the tree from the crotch down to the earth with a mixture made as follows:—to every two gallons of soft-soap add one pint of salt and one pound of flour of sulphur. This can be put on with a white-wash brush.

Water Furrows.—Every water furrow in your grain fields should be examined, and have every impediment to the free passage of the water removed, as it is important to keep the young grain as dry as possible throughout the winter season.

Winter Ploughing.—Stiff clayey lands which may be intended for spring crops should be ploughed, and that deeply.

Destruction of Garlic.—Among the means recommended to destroy garlic we know of none better than repeated winter ploughings.

Manure.—As no land, however rich it may have been originally, can be kept in heart without recourse to manuring, we would again urge upon all the necessity of hauling into their cow yards and pig pens as much mould and leaves from the woods, marsh mud, and all other substances convertible into manure, as their force and number of teams will allow of. None should consider that he had discharged his duty until he had as many loads thus disposed of, as, with the quantity to be made by his horses and cattle, would enable him to give a full and ample dressing to every acre he means to cultivate in corn next year. Of this he may be certain, that every load he gives to his cow-yards and pig-pens will be rich in all the elements of fertilization by the time he is ready to haul it out in the spring on his corn ground—and we need not tell him that as corn is a tree in miniature, and a gross feeder withal, that it requires to be fed with an unstinted hand.

The Family Sleigh.—If you have not already anticipated us, inspect your family sleigh, and have it put in tip-top order, so that it may be ready, on the coming of the first snow, to take your excellent lady and her young ones on a visit to her neighbors. Among the winter pleasures of a country life, there is none, perhaps, which bring more rapture to the hearts of the junior members of a farmer's family than a sleigh ride, and as such is the case, every father should feel himself bound not only to gratify them, but to do so in a vehicle of which he, as well as they may feel proud.

We have thus endeavored to sketch, in a brief form, such objects as command attention on the farm, and will now proceed to

THE GARDEN,

Where, indeed, if attention has been paid to our last month's memoranda, nothing needs to be done. But we will remark, that *if the weather shall prove mild*, you may still finish any work that we called your attention to in our last number, such as dressing asparagus and strawberry beds, the preservation of garden roots and all kindred things.

In conclusion, we would ask that every omission which we may have made may be supplied by the superior vigilance of our patrons,—of this we feel certain, that in the garden nothing will be omitted, because in the devotion of its superintendant to every thing which tends to increase the comforts of her family, she is always to be found in the line of her duty.

MARL.—The editor of the Marlboro' Gazette has seen one or two specimens of Marl from the farm of Mr. R. McGregor, near Marlboro'. Mr. McG. tried the use of Marl on his Tobacco, and the result was quite satisfactory. The marled plants outgrew the others, and proved it to be almost equal to plaster. There is a great abundance of it on the farm of this gentleman.

One pound potash in 1 gallon water will form a lye strong enough to kill the vermin and moss that gathers on young fruit trees, if applied in May or June.

BARLEY.

October 28, 1846.

To the Editor of the American Farmer.

Dear Sir:—The wheat crops of late years having become exceeding precarious, the attention of the farming community has to be turned to some other staple, on which more reliance can be put. Amongst these, Barley has attracted my notice, and the purpose of this is to ask, through the *Farmer of November*, the following questions: Will Barley succeed upon a red soil of medium quality? 2d. Upon a soil of such quality, what product can be reasonably counted upon? 3d. Is it a tolerably sure crop? 4. Is there a constant and permanent market for it, where, and what is the average price per bushel, for a number of years together. I reside in the Red Land District of Virginia, at the base of the South-west mountains, the soil of which naturally contains several per cent. of lime, and a good proportion of chocolate ground. I should also wish some information as to the time of sowing, and the *method of preparing it for market*, the quantity of seed to the acre, and any other information which you think important. With heartfelt wishes for the success of your truly valuable paper, which contains more practical information than any other I know (an opinion in which all who see it unite) I remain what I hope always to be, an ENQUIRING FARMER.

The above was received too late for our Nov. No. In answer to the questions we have to remark—

1st. The *color* of the soil can exert no influence upon the product of Barley, unless it be of so tenacious a clay as to defy the extension of the roots. Barley delights most in a deep mould of generous fertility. In such a soil it would prosper and handsomely reward the husbandman for his toils and labor. In such a soil from 40 to 60 bushels are frequently raised upon an acre; but it would be safest not to indulge in too sanguine calculations as to product, and therefore it would be best for those who may adventure upon its culture as an experimental crop, not to carry their expectations beyond from 25 to 30 bushels to the acre—that quantity we feel assured might safely be calculated upon.

The *color* of the soil of our correspondent we apprehend may be referred to the oxide of iron, and unless it exists in very large quantities, could not prevent the growth of Barley or any other of the cereal grains—certainly not, *if lime* also exists there, as that mineral deprives it of the power of evil.

In the above remarks we have answered the 1st and 2nd questions, and will now proceed to the 3d.

3. It is a tolerably sure crop, infinitely more so than wheat, rye, or oats.

4. The market for it is constant, and will remain so long as malt liquor is drank. In Baltimore, Philadelphia, New York, and every other city in the union, where a brewery is established, it can be readily sold. The price varies from 65 cts. to one dollar, and we think that 75 cents might be looked to as an average price.

5. The time of sowing is as early in the spring as the ground can be *properly* ploughed and put in good order, as Barley requires fine tilth. If the soil is *te-*

nacious it would be best to plough this winter, and cross plough in the spring; when it should be thoroughly pulverized by means of the roller and harrow.

6. Barley is prepared for market in the same manner as wheat or rye, and is much easier thrashed than either.

7. If Barley is permitted to get *dead* ripe before it is cut, it is apt to shatter, it should therefore be cut earlier than either wheat or rye.

8. The straw of Barley is relished by most kinds of stock, while the berry, itself, makes a chop equal to rye for all purposes of feeding horses or fattening cattle.

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☞Since the above was written, we have received the following article upon this subject, for which we are indebted to the kindness of our friend SKINNER, in whose "*Farmers' Library*," for this month, it will probably appear.

CULTURE OF BARLEY.

[The following information on the culture, uses, product and value of Barley, as compared with other grain crops, it will be seen was given at the request of the Editor of the Farmers' Library.]

AUBURN, N. Y., September 15, 1846.

Dear Sir—The various injuries to which the wheat crop is obnoxious in Maryland has set some of the best farmers there to casting about for a substitute less liable to the ravages of insects and the casualities of the seasons. Some think of having recourse to barley as the most promising alternative, and, being almost destitute of practical experience, have requested me to obtain for them the best information from persons most conversant with its culture in this State, where it seems to constitute an important staple in your system of husbandry. I pray you, therefore, to excuse my asking you (being persuaded that much practice, with your habits of close observation, has made you familiar with the subject) to give me information on all the points upon which you may suppose a farmer would desire to have light, who is altogether in the dark—as for instance, in respect to the kinds of barley, the time of sowing, and quantity to the acre—the kind of land (and preparation thereof) best adapted to it—whether or not it serves well as a protection to a grass crop, or whether it is not liable to injury, or to much difficulty in the process of curing, when used as a covering to grass. Do you find it nutritious and commendable as food for stock, and for stock of what kind? and how prepared when so used? What is its usual product per acre (and its price) as compared with wheat, corn and oats?

My own ignorance of the subject, and the haste with which I write, may have led me to overlook some points material to a thorough understanding of the culture and economy of barley husbandry; in which case, I beg you to supply what may be needful to a full development, for the benefit of gentlemen who, as I can confidently undertake to say, are not given to hiding their own lights under a bushel, when the communication of anything they know can be useful to their brother farmers. If you could conveniently furnish me with such reply as you may be kindly disposed to make, within the first week of October, you would greatly oblige

Yours with esteem and respect,

To H. S. RANDALL. J. S. SKINNER.

CORTLAND VILLAGE, N. Y., September 26, 1846.

Dear Sir—I employ my first leisure in answering your inquiries on the subject of barley and its cultivation.

1. *Varieties.*—Barley (*hordeum distichum*) is of two general varieties, known as winter and spring barley. The former is not cultivated in this State, that I am aware of. It is said to be easily winter-killed; but on lands which are kept constantly covered with snow until the beginning of warm weather, or on those which are not subject to freezing and thawing in winter and spring, it is better and produces heavier grain than the spring variety. It can be harvested in time for a second crop of spring barley, in favorable situations.

Spring barley is subdivided into the Siberian, skinless, sprat, chevalier, etc.; but the two varieties most commonly known and cultivated are the "six-rowed" and the "two-rowed." The six-rowed has three seeds united at the base, at each joint of the *rachis*, on each side alternately; the two-rowed has but one row of seeds on each side of the *rachis*. It puts forth three flowrets on a side, at each joint, like the preceding, but the outside ones are barren. The "four-rowed" is but a deviation from the six-rowed.*

There is but little difference in the yield of the six and the two-rowed. The former is about a week the earliest, and, for reasons which I am unacquainted with, usually is quoted two or three cents higher per bushel in the New-York market † Both bear the same price in the country markets: if there is any difference, the two-rowed is preferred, it being the largest and plumpest grain. No difference is perceptible in the varieties as food for stock. The two-rowed is much the most generally cultivated in this region.

2. *Time of Sowing.*—As early in the season as the ground can be got into proper condition, is with this, as with all the other cereal grains, the best time for sowing. The early crops are almost invariably the best. Barley, however, requires that the ground be in a dry, mellow condition at the time of sowing. It will do to sow it late—as late as oats—with no greater depreciation in the crop than follows the late sowing of the latter. It is customary with our farmers to get in their spring wheat first, barley second, and oats third.

3. *Quantity of Seed Sown.*—Full three bushels are required to the acre. Of the two-rowed, the grains, being larger, I sow at least three bushels and a peck.

4. *Kind of Land adapted to it.*—Dry loamy or gravelly soils; but it will flourish in any of our loose soils which are sufficiently rich and dry. It falls on stiff clays, and on all wet, cold lands.

5. *Preparation of the Soil.*—It requires about the same preparation, by plowing and harrowing, as spring wheat. It requires land, too, as rich as prime wheat land. On poor and worn-out soils, oats are more profitable. It has one peculiarity which distinguishes it from all the other cereal grains: it will yield well, and the ears will fill, on highly manured lands, on which the others would run to straw, fall down, and entirely fail to fill. Barley, under such circumstances, will fall down, like the other grains,

*The varieties of barley will be illustrated when we come to that subject in the republication of Stephens' Book of the Farm.

†Some experienced manufacturers say that there is perhaps, no intrinsic difference in quality, but that the two-rowed requires more time and care to extract thoroughly its qualities.—*Ed. Farm. Lib.*

but the ears will fill when it is lying nearly flat on the ground. I always have it, therefore, follow highly manured hoed crops, in my rotation. I frequently apply sixty two-horse loads of manure to the acre for turnips. If I follow them with wheat, it always fails; and it would require no experiment to demonstrate the folly of sowing oats under such circumstances. Barley will generally fall down, but I have raised sixty, and even more, bushels per acre on soils in that condition. This year I had a small patch of it mixed with flax, on excessively manured land adjoining a barn. The growth was extremely rank, and a whirling wind threw it down, and twisted and tangled it in a manner I never before saw equalled, about the time the grain began to set.—While this went on ripening, the roots put out a new set of shoots, which stood up. At harvesting, the first heads were full of fine plump grain, and the barley, though much smaller, was sufficiently advanced to cure, on the second growth.

6. *As a Covering for Grass.*—It is generally preferred, by those who cultivate it, to any other crop, for this purpose. I have never had my grass seeds fail with it.

7. *Liability to Injury.*—It is less liable to injury than any grain crop with which I am acquainted. Its tendency to fill, when down, has been alluded to. No insect enemies have yet attacked it, so far as I am aware. I have never known it to rust, though oats are very prone to on my lands. It has a remarkable power of resisting drouth. Its greatest enemy is continued rainy, warm weather, at the time of harvesting. It sprouts readily after it is cut, which seriously injures the grain. I have known crops of it injured in this way, though I never had one of my own thus injured, nor do I think it very necessary.

8. *Difficulty in the Process of Curing.*—It cures with as much facility as any other grain, and is cut with as little labor, when taken in season. It should be cut when the kernels are in a doughy state, and while the straw is somewhat greenish, and stands erect. Left until dead-ripe, the straw "crinkles," and is cut with the cradle, raked and bound, exposed in shocks (where two rows are set up loosely together, without any cap) for a day or two, and then carted in. If the straw is green, it is generally left a day or two in swarth, before binding; but care must be taken that it does not cure too much, on account of shelling. If the crop is down or "lodged," it is cut with a scythe, suffered to lay on the ground a day or two, raked into swaths and cocked like hay, or, if already dry enough, carted in. It may be raked with a horse rake, if not too dry. This is a cheap way of harvesting barley, but it is liable to the objection that the unbound straw takes up an entirely disproportionate amount of barn-room. It is also difficult to stack it unbound, the straw being short and singularly "slippery."

9. *Its Value for Feeding Stock.*—According to the careful experiments of Thaer, the comparative values of wheat, barley and oats, in feeding cattle, are represented by 47, 32 and 24, the *measure* being the same. It is considered by our farmers, by measure, to be about half way between oats and corn, in its nutritious properties—perhaps rather nearer the corn than would be indicated by such middle point.

I have fed it to all kinds of farm stock, and like it for all, excepting carriage-horses. For these, oats are preferable. But for draught-horses, oxen, cows, young cattle, sheep and swine, it forms an excellent feed. I prefer it to corn for draught-horses, and also for other kinds of stock, excepting swine, where the object is not directly to fatten for slaughter. I prefer it, because I consider it less stimulating and less cloying. For fattening swine, nothing can exceed corn; but barley is beginning to be used quite as generally for that purpose in this region. Very fat hogs eat it better toward the last than they do corn. No difference can be detected in the pork made from the two grains.

11. *Product per acre and Price compared with other Grains.*—In my answer to Mr. Walker's "Treasury Circular" (in 1845,) I submitted the following tables, which I believe to be essentially correct, and which include most of the information you desire under this head:

Grains.	Cost per acre.	Average number of bushels per acre.	Average value of stalks or straw.	Total value, estimating grain at average prices for the last five years.	Net profit per acre.
Indian Corn	$15	30	$5 00	$20 00	$5 00
Spring Wheat	9	12	1 00	12 40	3 40
Barley	9	28	1 25	13 29	4 29
Oats	7	38	1 25	10 18	3 18

AVERAGE PRICES OF GRAINS FOR FOURTEEN YEARS.

Year.	Wheat.	Ind. Corn	Barley.	Oats.	Buckwheat	Peas.
			Cts.	*Cts.*	*Cts.*	*Cts.*
1832	$1 12	$0 56	65	35	44	60
1833	1 12	56	65	38	44	62
1834	1 06	62	60	37	40	62
1835	1 22	69	75	38	56	75
1836	1 38	87	75	40	50	75
1837	2 00	1 00	75	44	62	80
1838	1 60	88	70	42	50	75
1839	1 50	80	62	38	50	62
1840	1 25	62	50	30	38	50
1841	1 07	62	50	28	38	50
1842	1 06	60	45	25	38	50
1843	88	44	40	20	31	40
1844	85	44	40	20	30	44
1845*	90	50	40	25	31	40

*The prices of 1845 estimated up to the 15th of October.

It will be understood that the average product above stated includes every variety of land and cultivation. My own crops of barley have averaged not less than 38 or 40 bushels per acre for ten years, and I have raised 65 bushels per acre in some cases.

10. *Preparation.*—It should be ground for all kinds of stock. Some soak it soft and feed it unground, but it is poor economy. The meal is fed dry to horses and sheep; mixed with water or milk, and fermented until it acquires a sweet taste, to swine; and either dry or cooked, to cattle.

12 *Miscellaneous Remarks.*—Having replied to your questions *seriatim*, I will, in pursuance of your request, make such other suggestions as occur to me, which I think would prove useful to those unacquainted with the nature and culture of barley

Climate.—Barley is cultivated and comes to perfection in a greater variety of climates than any other grain.

Mixing with other Crops.—The two-rowed barley is frequently sown mixed with oats, and in some instances with flax. I have tried both. They do very well together, but on the whole I prefer separate sowing.

Effect of Barley on Soils.—Barley is generally considered a less exhausting crop than oats. Such is my impression, but I am not able to adduce any decisive proof.

Barley Straw.—If the barley is cut quite green, and the straw is cured so that a considerable portion of it retains this color, it is eaten by cattle, in cold weather, almost as readily as hay. It is softer than the other straws, and is much more readily eaten by all kinds of stock, where the process of cutting is not resorted to. I usually cut my oat straw for my horses; I feed the barley straw uncut to my cows. For two winters, it has been my custom to give the latter two feeds of barley straw a day, and one li hush one of hay, with a feed of from six to eight quarts of turnips. They will do as well on this as on a full supply of hay, and it is much cheaper. I have also fed barley straw without hay, giving turnips, or a little barley meal. Either way is cheaper than wintering on hay exclusively, and with proper management will do as well.

Barley in the Rotation of Crops.—It is customary among the best farmers in this region, to take but three grain or root crops before seeding down. The first is generally a hoed crop, on good soils, viz., corn, potatoes and turnips. The first crop receives all the manure. Where the manure is not applied very plentifully, wheat is often the second crop, and barley or oats the third, with grass seeds. But it is common, with many (who make large quantities of manure,) to manure their turnips, potatoes, and as much of their corn as they can, very bountifully—say from 40 to 60 loads per acre. In this case barley is the second crop, followed by wheat and grass seeds. On ordinary lands I have sometimes sown oats on the inverted sward without manure; followed them with hoed crops, well manured; and then seeded down with barley. This leaves the land in capital condition for good, luxuriant meadows. On some lands, spring wheat would be more profitable than oats as the first crop in this series. But whatever the order of my rotation, barley invariably constitutes one of its crops. A very extensive and successful farmer here takes but two crops before seeding down, viz., roots or corn highly manured, then barley with grass seeds. He prefers to purchase his oats, and raises barely enough wheat for his own use.

Advantages of Barley over Indian Corn.—On prime corn lands, and where force enough can be obtained to manage it, no crop will yield a better profit than corn; indeed, no one, perhaps, equals it. But it requires the choicest land, great quantities of manure, a great amount of labor, and a favorable climate. On no ordinary farm can all the arable land be kept in a suitable condition for corn; on many farms the requisite amount of manure cannot be had. It is difficult, and would be here impossible to obtain sufficient labor to manage the crop, if it became anything like a general substitute for the other grains. And finally, on many of our hill lands corn is always a precarious crop, even with the best management, by reason of the shortness of time between the spring and autumn frosts.

When any of these considerations prevent the rearing of corn, I regard barley as the best substitute. It has these advantages over the former: it does not absolutely require so rich land as corn, though, as I have said, it will yield a profitable return on the very richest land. Its cultivation requires no more labor than the cultivation of wheat. It will ripen in the shortest season and on the frostiest lands. Its early ripening gives it an advantage over corn under any circumstances, for summer and fall feed to cattle and swine. Where pork is fattened to any considerable extent, this is an important consideration. Pork is made nearly a half cheaper in warm than in cold weather; and to make its production profitable, swine should be at least one-third fatted by the time corn is ripe.

Threshing Barley.—This may be done by machines, by the flail, or by horses. It threshes more easily than wheat or oats. Much is *written* about "hummeling," or breaking off the awns or beards from the grain. I thresh out the grain as I would oats, and that is all. It is then fit to be sent to the mill to be ground into meal for stock.

Storing Barley.—I put it into bins holding, say one hundred bushels each, in a granary; and I never have had occasion to move it or shovel it over, and I never have received any injury.

You will please excuse me for the desultoriness of these rapid remarks—and, believe me, sir,

Your friend and obedient serv't,

HENRY S. RANDALL.

JOHN S. SKINNER, Esq.

ACTION OF LIME.

Upperville, Fauquier Co., Va.
October 30th, 1846.

To the Editor of the American Farmer.

Dear Sir:—I find in the Saturday Courier of the 10th inst. an article "by a disciple of English agricultural Science," on earths, sand, lime, &c. Amongst other things, he says,—"In some soils lime exists to the extent of 55 to 60 per cent. of the entire soil, in others not more than 15 or 20 per cent., in others it is altogether absent." Again, he says—"The presence of lime is exceedingly valuable to all soils, and its artificial application necessary to the production of successful crops, where it does not naturally exist."

I wish to know if 15 or 20 per cent. of lime is sufficient to ensure good crops, every thing else being equal,—if not, what quantity would be sufficient. For instance: two acres of land made equally rich with manure, and producing the same quantity of straw, while one acre produces 10 bushels of wheat, and the other 20 bushels.

This I have often found to be the case in this

county, but not immediately in the same neighborhood. I wish to know if the existence of lime in one case, and its non-existence in the other produces this result. Once more,—if there is an absence of lime, or nearly so, can all the good results be produced by an artificial application,—if so, when once applied, what lapse of time, before there should be a re-application?

I should be pleased to be informed upon the above in your valuable paper. L.

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ANSWERS TO THE ABOVE QUESTIONS.

1. It is impossible for us to arrive at any definite idea from the sentence quoted by our correspondent, as to the meaning of the author to whom he alludes. But we presume he must be speaking of some of the chalk formations of England; for soils with from 50 to 60 per cent. of *lime* in them must be conceded to be pretty fair specimens of *lime* instead of soil—at all events, they might be called lime-earths, and would, of themselves, answer for the purpose of liming such soils where lime was not present.

It is most true, "that *lime* is exceedingly valuable to all soils, and its artificial application necessary where it does not naturally exist." There are certain descriptions of crops which cannot be successfully grown *without lime is naturally or artificially present.* Nor can any course of permanent melioration, in the quality of an exhausted soil, be effected, if lime be absent from the soil, without its artificial application.

2. Our correspondent desires to know whether 15 or 20 per cent. of lime is sufficient to ensure good crops? If the other fertilizing elements be present in a soil, we should think that 5 per cent. would be sufficient for all valuable purposes, and as it became exhausted, by being taken up by growing crops, the soil could be resupplied by small applications. Twenty-five bushels, per acre, at intervals of seven years, would keep up a healthful state of fertility, provided at each rotation the soil should receive a competent dressing of stable or barn-yard manure, or that clover were sown and the aftermath ploughed in at the commencement of every rotation. The action of lime is manifold—it will render tenacious clays friable and more easy of being worked, on the one hand, while it will render sands more consistent on the other. In its caustic state, before it reabsorbs the carbonic acid of which it is deprived in the process of calcination, it will decompose the inert vegetable matter in the soil, and thus prepare it as food for growing plants. This property, however, leaves it on becoming a carbonate, which it does so soon as it has attracted to itself its proper quantum of carbonic acid—and hence we are of opinion, that small quantities, repeated at intervals of a few years, answer better than large doses applied at once.

3. The *difference* in the product of grain on the two lots of land, of which our correspondent speaks, might have been produced by the *absence* or *presence* of lime in the one or the other; though it is impossible for us to speak with certainty. This we will say, that no soil can be good wheat producing land unless lime be present.

The *artificial application* of lime we think would prove at least as good as where it may naturally exist in the soil. Indeed, we believe, and for the reasons we have before assigned, that it would convert the dead matter of the soil into the food of plants, so long as it maintained its caustic state.

4. If the soil to be limed has much vegetable matter in it, whether in a state *naturally* susceptible of decomposition, or in an inert state, it is competent to take more lime than a soil where such substances exist but in small quantities. A *hundred* bushels per acre on land well supplied with vegetable matter might safely be applied; but if there be but little vegetable matter in the soil, it would be safer to apply 25 or 50 bushels per acre, and repeat the doses, at intervals, as the soil should become filled with such matter. On land bearing a good crop of clover, 100 bushels would be about the right dose, but on worn out land, 25 bushels per acre would be quite enough. Doses of 25 bushels per acre may safely be applied every four years, until a hundred bushels shall have been applied—doses of 50 bushels, if applied, might be repeated at the end of the second rotation of four years, while a dose of 100 bushels would last for 14 years.

ADDRESS OF DR. JOHN H. BAYNE,

DELIVERED BEFORE THE PRINCE GEORGE'S AGRICULTURAL SOCIETY, AT ITS SIXTH ANNUAL MEETING.

Mr. President, and Gentlemen of the Prince George's Agricultural Society:

In assuming this position before you, I fear I have not sufficiently deliberated upon its importance, or the duty of addressing you would have devolved upon some other individual. Although I will not pretend to say that I am entirely unacquainted with the pursuit of HORTICULTURE, yet I feel incapable of investing the subject with that interest which it so richly merits.

The privilege of presenting this subject before this Society, is a source of congratulation, as it is the introduction of a topic somewhat novel with us on such occasions. And if I succeed in uttering any thing which will conduce to awaken attention to this pursuit, it will afford me a rich reward. It must be apparent to all present, that to go into a practical and theoretical detail of the operations of Horticulture, would introduce us into a field too extensive to be embraced in the scope of a single address.

Horticulture, in all ages, and in every stage of social improvement and civilization, has been recognized as an employment of great utility and importance. We find it coeval with our race, and the first occupation recommended to man by GOD himself. For its antiquity and dignity, I refer you to the pages of Sacred history. It is a pursuit pre-eminently calculated to inspire us with exalted ideas of our Creator. It unfolds the transcendant beauties of His creative power, in novelties so attractive, that he who engages in it soon becomes an enraptured votary. It opens our investigations in the mysteries of Nature; and O! how inexhaustible is the theme for the contemplation of man! The germination of the seed; the

organization of the leaf; the vegetation of the plant; and the development of the fruit; are phenomena sufficient to excite the profound admiration of all. They speak an eloquence inimitable by the orator. They appeal to your soul as silent memorials of the beneficence of God; whose wisdom is shown in every plant and revealed in every flower. It is a historical fact that those nations who have been most distinguished for their devotion to Horticultural and Agricultural pursuits, have attained the greatest moral and intellectual elevation. Our earliest records establish the pleasing fact, that terra culture has excited the sweetest strains of the poet; and has engaged the attention of the most profound statesmen and philosophers. Our avocations in life, whether good or evil, will have a tendency to produce a corresponding result upon our morals. And such is the organization of the human mind, that it will forever continue to be susceptible of these modifications. There is no employment more moralizing and instructive than that of multiplying the treasures of the vegetable kingdom. The influence that a cultivation of this taste has in society has been frequently alluded to by writers. By embellishing the scenery about our homes, we should render them more attractive, and excite in our children a permanent attachment for them. There is nothing calculated to make us cling more tenaciously to our patrimonial possessions, than the recollection that those verdant lawns; those ornamental trees; those productive orchards; or those beautiful gardens had received the fostering care of our beloved parents. The spontaneous impulse of every heart cherishes with imperishable delight their memories, and whose breasts will not expand with gratitude when they contemplate those monuments of parental care. In the cultivation of a taste for this pursuit, which identifies and attaches us to our native soil, we add permanency to our civil and political institutions. And that trait for migration, so predominant in the American character, receives from it a salutary check. Our young men, too often allured by the guttering prospects of aggrandizement, leave the places of their nativity, and are doomed to disappointment in a foreign clime. The ties of family are severed; the fervor of a tropical sun endured; an inhospitable foe encountered; and life itself periled in pursuit of riches and honor—which pursuit, alas! too often results in delusion. The very stability of the republican institutions under which we live are too often jeopardized by this wandering propensity. A durability cannot be established upon a foundation of sand. The progress or retreat of this pursuit has always pointed as an unerring index to the moral condition of civilized nations. The implements of husbandry which have escaped the ravages of time, are sought after by the historian as a criterion of the state of civilization. The plough, which has been called by some writers most emphatically the cotemporary instrument of civilization, has not, up to this time, been introduced into some parts of the world; and let me ask what is the state of their moral and intellectual condition? They are still enveloped in the clouds of grossest ignorance, and but a few removes above the beasts of the field.

There is no employment which, in proportion to the quantity of land cultivated, makes so profitable a return. In the vicinity of London, there are occupied as fruit and kitchen gardens, about 20 000 acres of land, of which the annual produce is sold for more than $7,000,000. For the supply of the New York market with vegetables, fruits and flowers, there are cultivated several thousand acres of land, which is said to produce, in the aggregate, annually $1,000,000. The same kind of data could be furnished, showing that millions of human beings are engaged in this lucrative pursuit.

It has been most appropriately remarked by the editor of the New York Tribune, that our country is greatly overstocked with professional men, and a persuasive appeal is made by him to our aspiring young men to avoid the crowded avenues of those professions, and devote themselves to the shady walks of Horticulture and Agriculture. "We have," says the same writer, "thousands of young men, who would have been useful and respected citizens, if Agricultural Schools had existed in their boyhood, but who are now thriftless, useless and miserable. The professions cannot afford employment for half our educated and ambitious youth. The soil is the only true resource."

In no occupation can the healthful activity of the mind and body be more happily blended than in the pursuit of Horticulture. Its manual operations are so promotive of health that the professional man, and even sedentary females may devote advantageously a portion of time to it in each day. The perfect order and beautiful arrangement in the vegetable kingdom are calculated to inculcate the lessons of love, kindness and philanthrophy.

As a scientific pursuit, it strongly recommends itself to the contemplative inquirer. Whether we regard it as an art or science, administering substantially to our wants, or diffusing useful knowledge, it merits our highest consideration.

The study of the organic laws of nature, of the culture of fruits, flowers and vegetables, should be familiar to all. It is a saying of old, that he who succeeds in making two blades of grass grow where but one grew before, merits the appellation of benefactor. The same doctrine will apply with equal force in reference to the introduction and cultivation of valuable fruits and vegetables. The sails of commerce which whiten the ocean, may bring back riches for the merchant. The name of the philosopher who makes discoveries in the abstract sciences will be handed down thro' successive ages. And even immortality will be acquired by the military chieftan who has distinguished himself by the extermination of thousands of his fellow beings. But all this is "the bubble reputation," and when compared with the names of the true philanthropist and benefactor; those who have made valuable improvements in Horticulture and Agriculture, should sink into the shade. But we rejoice to say a new era is dawning upon us. A taste for these pursuits is pervading the whole Union. Every grade of society is becoming interested—and we hail it as a happy omen of progressive refinement. The possession of wealth is not necessary to the enjoyment. The picturesque scenery; the varied landscape, and the fragrance of the sweetest flowers, can be enjoyed by those in humbler walks of life. The beauties of Flora and the bounties of Pomona are within the reach of the humblest cottager. Says Lord Bacon, "God first planted a garden; and indeed it is the purest of human pleasures; it is the greatest refreshment to the spirits of man; without which buildings and palaces are but gross handy works."

In the departments of Floriculture and Ornamental Gardening, we find many persons who recoil at the mere mention of them. They oppose them on the ground of yielding no revenue, as if the only design in our creation was the accumulation of wealth. But shall we reject those pursuits which are so well

calculated to soften the asperities of our nature, and which have been the choice of the virtuous and enlightened from time immemorial. There is no surer evidence of cultivated taste, or of rural happiness, than we see in those floral ornaments, whether appended to the humble cottage or to the splendid palace. Nature, in the display of her inimitable floral gems will always afford a fascinating employment. No pursuit is more congenial with female character, and tends more to elevate and refine it. In the shades of rural retirement, her virtues expand; woman is rendered more lovely and domestic happiness is consummated.

To afford you occular proof of the wonderful achievements of Horticulture, I would refer you to our large cities and their surrounding country. Their markets crowded with the choicest fruits, flowers, culinary productions, and ornamental plants in countless profusion. Their environs studded with villa residences, elegant gardens, ornamental grounds, conservatories and graperies. Affording comforts and luxuries to millions, and profits to tens of thousands.

The introduction of new and valuable fruits seems to be an absorbing subject with Pomologists throughout the civilized world, and it is certain that nothing contributes in a more eminent degree to the comforts of the consumer, or affords a greater profit to the cultivator. Ripe fruits are healthful, light, nutritious and of easy digestion; producing a chyle admirably adapted to the functions of the human body. From the qualities which they possess, their habitual use, according to Mr. Knight, destroys the artificial appetite for strong fermented liquors and the preparations of alcohol. But to go into a classification of the various fruits of standard excellence, and to give directions for their cultivation, would require a volume. For all necessary information, I refer you to the works of Lindley, Thatcher, Kenrick, Downing and Hovey's invaluable Magazine of Horticulture.

Loudon, Lindley and Knight of England, and Van Mons of Belgium, by their unwearied labors and profound researches in Pomology, have left enduring monuments to their memories. Knight and Van Mons in establishing their respective theories, have originated more valuable fruits within the last forty years, than had been done previously by the whole world during a period of twenty centuries. Knight's plan was accomplished by cross fertilization. The pollen or fertilizing powder is delicately removed from one flower and transferred to some free bearing flowers strongly related to the first, and is there carefully placed upon the summit of the pistillum in the flower intended to be fertilized. This prepared flower is then protected with thin muslin or gauze to exclude the bee or insects which would otherwise frustrate the process. The seed produced from these hybrydized fruit are carefully saved and planted, and according to the qualities of the parents you obtain new and valuable varieties.

The immense collection of fruits added to our lists by the indefatigable labors of Van Mons has been astonishing. His theory for the multiplication and improvement of the various fruits originated with himself. Aud had it not entered into the conceptions of that extraordinary man, in all probability it would have continued to this day locked up among the arcana of nature. No predecessor had left a ray for him to begin with. The lights of science could not be called in to his aid. It was only to be demonstrated by unwearied perseverance through the protracted and inexplicable operations of nature. It was the suggestion of his own mind. The result of his experiments has established an important era in the history of fruits. Van Mons ascribes the success of his experiments, by which so many fruits of such great merit were obtained, to this principle: That in proportion as a fruit becomes removed from a state of nature by repeated regeneration; that is, by always planting the seed of the last production; in the same degree will the fruit become ameliorated, until it attains the highest perfection of which it is suseeptible. In the application of this principle, he has ascertained that the Pear, when raised from the seed, requires seven generations to arrive at its highest perfection. The first generation, or the period from planting the seed of the domesticated Pear, to the time of its first fructification, requires a period of fifteen years. The second generation embraces a period of ten years; and so on with the period for every successive generation in a decreasing progression. The whole period to accomplish his theory requiring about forty years.

The Apple, upon the same principle, required a period of four generations. The Peach, Apricot, and Cherry, required three generations. From the astounding results growing out of the experiments of this man, we have a legacy bequeathed to us, which affords us an advanced position, to prosecute our experiments with a certainty of success. It will be the privilege of future generations to determine the limits that nature will go in the amelioration of Fruits.

In illustration of this theory: who, for instance, could detect the relationship between the delicious class of Beuerres and the little austere wild Pear, which grows spontaneously in your fields? What resemblance can you trace between the magnificent Gage Plum and the savage Sloe; or between that king of Apples, the Golden Pippin, and the sour Crab? And last, though not least, who, could recognise in the native Strawberry the type of that splendid variety denominated Hovey's Seedling. But as astonishing as these transmutations are, they have been produced by this ameliorating process. I have enumerated these seminal productions to show that the Pomologist has been richly rewarded for the prosecution of his employments. Time will be usefully and honorably occupied in the origination and introduction of Fruits based upon these theories. This pursuit recommends itself strongly to the young; —and to create a taste for it should be the effort of those who feel an interest in their happiness. Children soon become deeply interested in employments of the garden or field, and acquire a stability of character and firmness of purpose which enable them to resist the seductive influences of vice; and in future time, as you examine the annals of Natural Science, you will find their names recorded as distinguished patrons.

But of the diversified productions of the field and garden which it is our privilege to enjoy, few are indigeneous to America. Of the cereal grains, for instance: Wheat and rye were originally brought from Siberia; buckwheat from Asia; rice from Ethiopia. Of our vegetable productions:—The artichoke from Brazil; the cauliflower from Cyprus; asparagus from Asia; the pumpkin from Astracan; the ruta baga from Sweden; and the tomato from South America. Our fruits from countries equally remote. The pear came originally from Europe; the peach from Persia; the apricot from Armenia; the plum from Lyma; the cherry from Pontus; the quince from Austria; and the almond from China. It is evident that in the distribution of the bounties among the various na-

tions of the earth, Providence has designed to show us our mutual dependence upon each other. In the discharge of these obligations imposed on us for these blessings, we should disseminate those productions of the garden and field extensively. For all men will eat good fruit, says Sir William Temple, so that the choice is only whether one will eat good or ill—and of all things produced in a garden, whether of vegetables or fruits, a poor man that has one of his own, will eat better than a rich man that has none. And I rejoice to say that a poor man has the privilege of enjoying those luxuries almost in an equal degree with the rich man.

Permit me, gentlemen, before I finish on this occasion, to bring to your consideration, this society and the object of its organization. This society like most others in the country which have grown into usefulness, has originated with a few public spirited and enterprizing citizens, and did not delicacy forbid, I might indulge in partial eulogy. But, sir, they require no heralding of mine. They will live in the memories of a grateful people. Their labors will attest their worth in the advance of the industry of their counties and State. A foundation is laid upon which an enduring edifice may be reared. They have erected a broad and comprehensive platform upon which all may meet and harmonize. It is exempt from the disgust of political warfare. Personal denunciations and party recrimination find no admission here. A desire for improvement in the vital interests of Agriculture is manifesting itself throughout the length and breadth of our land. Witness the projected improvements and the multiplication and dissemination of periodicals throughout the country. Not more than twenty-seven years have elapsed since the first paper devoted to Agriculture was published in this country. It is with pride and boast we say, that Maryland had the honor of giving the first great impulse to American Husbandry through the pages of the American Farmer, and we rejoice still more to say, that he, who was then pioneer in that great interest still lives to illuminate our pathway, and adorn the pages of the Farmers' Library. Long, long, may that veteran editor yet live, and long may his eminent services be appreciated by the rising generations. The Farmers' Library should be read by every farmer in the land.

The important connection between Agriculture and National Prosperity is obvious to all. It is the main pillar of that prosperity. Withdraw it, commerce is paralized, manufactories languish, internal improvements are discouraged, and the fiscal operations of your government are suspended, literature, the fine arts, and sciences follow pari passu with it, as it advances or recedes.

Between Science and Agriculture, there is an intimate relation existing, and in order to pursue our experiments successfully, it is necessary to have correct data; which are only to be acquired by investigation. Although we have instances of the unlettered man engaging in this avocation with success; yet, who will not admit their physical labors would be greatly aided by the lights of science. There are three sciences in paticular, which the Argiculturist will derive great benefit from, viz: Botany, Geology, and Chemistry. The first describes the curious organization and functions of plants, and their power for receiving and assimilating their food. Geology describes the character and variety of our soils, and discovers the mineral manure, and suggests the application of new substances to the soil.

Liebeg explains in a scientfic manner, the chemical processes of vegetation, and the sources from whence plants derive their nourishment. The laws which govern many of the changes in the proximate principles of plants have been explained in his work on Organic Chemistry. No man engaged in the cultivation of the soil should be without this most invaluable work. And it must be obvious to all, that since the introduction of the recent scientific works of Johnston and Liebeg of Europe, and of Dana and Gray of this country, Agriculture has advanced most rapidly.

Also great advantages have been derived every where from enlightened Agriculture under the fostering influence of Agricultural societies, and many farms in this country have been doubled and trebled in their productions.

As another important auxiliary for the improvement of Agriculture, I would invite the attention of gentlemen to the subject of establishing a County Experimental and Model Farm. For this purpose our Alms House, having attached to it one hundred acres of land, affords an opportunity of carrying out the plan without incurring much additional expense. In order to start the project, you might solicit donations in money; Agricultural implements; stock of the most approved breeds; and the most improved varieties of fruit trees. By the adoption of this plan, it is confidently believed, that your Alms Houses which are now a severe tax upon the people of your counties, would in less than ten years yield a revenue beyond the support of their inmates. If in the sale of superior stock, fine fruit, and the products of the farm, an income beyond its expenses should be realized; it might be most profitably returned to the people in the way of affording facilities for mental improvement, upon the plan of the American Institute of New York. Also, by purchasing books and philosophical instruments, to aid in the investigation of Natural History and the Sciences, connected with Agriculture and Horticulture. Lectures, and a Normal school might also be appended, for training a high character of teachers for the Public Schools of the county.

Mr. President, we have assembled here this day to commemorate the sixth anniversary of this society, and we celebrate it with the peaceful conquests of Agriculture, Horticulture and Domestic Industry.

We are here surrounded by an array of beauty and intelligence. The ladies, we welcome with all our hearts, for without their benign countenances, and smiling approbation, we always feel as if our enterprise would languish. Under their cheering auspices let us take fresh courage, and co-operate to perpetuate these annual exhibitions. In looking forward with confidence, for a return of these pleasing convocations, we shall give a wonderful impulse. Our annual fair will never fail to bring together numerous competitors, who will emulate each other in their various productions, and in the improvement of the soil. The distribution of premiums though small, will produce an extensive excitement. Experience has always shown Agricultural societies to be eminently beneficial in their results. And here it is necessary, that we should communicate our experiments either of success or failure, and accompany them with scientific explanations. A great amount of statistical information will be also obtained here from conversations with practical men, who will not furnish information in any other way. Modes of promoting industry will be discussed, variety of soil, routine of crops, application of manure, breeds of

stock, &c., with mutual explanations. You will excite a spirit of rivalry among your wives and daughters, who will vie with each other in the various specimens of domestic industry.

Place this society upon a firm foundation, and I have no hesitation in asserting, that the grounds now appropriated for exhibition, in five years will be filled with improved breeds of stock, and Agricultural implements; and this room will not have half dimensions enough to contain the domestic fabrics of your wives and daughters; and the countless profusion of fruits, and vegetables from your orchards and gardens. Let me, therefore, exhort you who have commenced and sustained this society thus far, not to relax your energies. Press forward in your noble work, and accomplish the object of your association. It only requires a concentration of your energies in these patriotic objects to ensure brilliant success. Every man in the community is interested in the perpetuation of this society. Debar none from a participation in its privileges. To the rich and poor, to the high and low extend the hand of fellowship. Offer the reward of merit to all. To effect a consummation of prosperity, it is only necessary to promote the enterprise of your fellow citizens. Sow the seed, and we shall soon spread luxuriance and plenty over the land.

Our society embraces upon its lists, the most intelligent, opulent and influential men. Providence has blessed you with a soil of surpassing fertility, and a congenial climate; with a proximity to market, and facilities of inter-communication rarely enjoyed by the Agriculturist. Superadded to these advantages, we have the inestimable blessings of civil and religious liberty.

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APPENDIX.

MODE OF PLANTING, PRUNING, CULTURE, AND SELECTION OF FRUIT TREES, &c. &c.

PLANTING TREES.—The first inquiry which presents itself is, which is the best season for transplanting, Spring or Autumn? To this question it may be said, that much depends upon the latitude in which we are located. Here we may adopt either season with almost equal success. The spring is preferable for Peaches, Apricots, and Nectarines, in latitudes where there is much intensity of cold. For the Pear, Apple, Plum and Cherry, the Autumn is to be preferred; from the time vegetation has been arrested by frost up to December. When trees are transplanted in the fall, the earth becomes consolidated around the roots, and they are ready to vegetate with the approach of the genial warmth of spring. Immediately upon receiving trees from the nursery, it is necessary to examine the condition of the roots; if dry, they should be immersed in water for twelve hours before planting them out. This is a very important precaution in dry weather, as the sources by which they derive their nourishment from the earth being diminished, the whole sap of the tree and even its vitality would pass off by transudation. The holes for receiving the trees should be dug at least three feet in diameter, and the depth regulated by depth of the soil. In no case, if the soil is shallow, dig the hole deep, even if it should be filled with the richest mould; for in so doing, the roots are invited to take a downward direction, until they reach the bottom, and then in their extension beyond the limits of the holes, they will have to penetrate into a poor uncongenial soil. The consequence will be an unthrifty and unproductive tree. The holes should be made from one to two feet deep, according to the depth of soil. Observe to cast away the subsoil, and replace it to the requisite depth with rich earth or mould, with well rotted manure thoroughly incorporated. Cut off the ends of the roots that have been wounded, smoothly with a sharp knife. Then set in the roots, about the depth they originally stood in the nursery, and spread them out in every direction, as nearly as possible in a horizontal position. Fill in thoroughly and compactly around the roots, with rich earth well pulverized. Great benefit will be derived to the trees by mulching the surface to the full size of the hole with decomposed manure, old straw, or hay. Each tree should be well secured to a stake planted by its side, with a wisp of straw, which will keep it straight, and prevent the vibrating influence of the wind.

Pruning.—In open culture in our climate, trees do not require that complicated and severe pruning, that they do in colder ones. Nature as a general rule is capable of sustaining her developments. Pruning is necessary to give shape to the tree, for thinning out limbs to prevent friction; or when they are so thick as to prevent the rays of the sun from penetrating. The best season for pruning has been ascertained by practical Horticulturists, to be the early part of summer; the tree at that time is most vigorous, the sap flows freely, and the wound heals over rapidly. When it becomes necessary to remove large limbs, the stumps and wounds must be smoothed over, and covered with a composition of red ochre and tar, which will effectually exclude air and moisture.

Culture.—Orchards should be kept under cultivation for the first six or eight years successively. After which occasional farming will be sufficient. It is very important in cropping, not to permit any thing to grow within four feet of the tree; also preserve the roots uninjured for at least that distance by cultivating the ground very superficially.

Selection of Fruits, &c.—After an experience of some twenty years in the cultivation of at least one thousand varieties of fruit, it is confidently believed, the number of varieties may be narrowed down to those herein enumerated, and which will generally be found sufficient for every purpose. It has been ascertained, that many of the fruits of the most exalted character in other climates, when introduced with us, prove to be inferior and valueless.

The Apple.—This is deemed the most valuable of all fruits cultivated in the United States—inasmuch as large quantities are not only required for home consumption, but for exportation. Foreign demand for American apples is becoming so great, that the Pippin and some other choice varieties in European markets will readily command ten dollars per barrel.

The apple will accommodate itself to any soil that is not decidedly wet, but prefers a stiff loam. The trees may be planted from thirty to forty feet apart, according to the richness of the soil. If planted sixty feet apart, the ground may still be advantageously cropped.

The following varieties succeed well in our climate, viz: the Benoni, Early Sweet Bough, Early Harvest, Maiden's Blush, Summer Queen, Niack Pippin, Fall Pippin, Monmouth Pippin, Superb Sweet, Orange Pippin, Œsopus Spitzenburg, Bell Flower, Daver's Winter Sweet, Pennock's Red Winter, Minister, Rhode Island Greening, Wine Apple, Roxbury Russet, Catlin, Newton Pippin, and Lady Apple.

The Peach.—This most delicious fruit, unsurpassed by any other in flavor, flourishes in most parts of

the United States. The Peach luxuriates in a rich sandy loam, but will conform itself to almost any soil that is friable, and kept in a cultivated state. Fifteen or twenty feet asunder is deemed a good distance for the peach tree. It is recommended to select the most elevated situation for planting your peach orchards, unprotected by shelter, and on northern exposures, so as to retard their blooming. The fruit is produced on shoots of the preceding year's growth, and in order to prevent the limbs from becoming too long and straggling, it is advisable to shorten the branches one or two feet; which will not only prevent the tree from becoming broken by the weight of fruit, but will make the tree more symmetrical. In order to obtain fine large fruit, it is absolutely necessary that you should resort to thinning the young fruit. This operation should be done regularly, that the fruit may be equally distributed over the tree. When the peaches are about the size of a marble, begin to thin, and never permit them to grow nearer each other than the width of your hand.

In our climate, almost the only enemy that we have to encunter is the worm, which attacks the tree just about the surface of the ground, or a little beneath. It commences its work by penetrating the bark, and feeding on the alburnum, until the tree is sometimes completely encircled; from which there is a copious exudation of sap, and frequently ends in complete destruction of the tree. One of the remedies is the application of refuse tobacco applied around the trunk of the tree. Another mode is to make a small cavity around the trunk, and pour in a pint of fish or beef brine, twice or thrice during the season. The most effectual mode of preventing their attacks, is to surround the trunk of the tree before the eggs are deposited with a small mound of earth or unleached ashes; which remove at the approach of cold weather. The eggs of this worm are deposited from the last of April to the first of June. Varieties which have proved first rate here, are the Early York, Early Crawford, Cooledge's Favorite, Early Royal George, Grosse Mignonne, Noblesse, Morris' White, Old Mixon Cling, Old Mixon Free, Malta, Red Cheek Malacatune, Yellow Rareripe, Red Rareripe, Lemon Cling, Crawford's Late Malacatune, Smock Free, Rodman's Cling, Late Heath.

The Pear.—The easy culture of this fruit, its adaptation to any soil that is not too compact or wet, its excellency and productiveness; the longevity of the tree, and its season since the introduction of new varieties, being protracted almost through the whole cycle of the year; render it one of the most desirable fruits which can be cultivated in the United States. The roots of the Pear extend more perpendicularly than the Apple; and therefore require a deeper soil. The Pear flourishes most on a deep rich soil, that is comparatively light and porous, so as to allow a free filtration, and through which its roots may easily penetrate. This tree assumes a pyramidal form in its growth, and requires less distance than the Apple. Twenty feet in a rich soil is a good distance, but less answers in a poorer soil. The malady which is occasionally destructive to the Pear, is called blight. It generally attacks the tree during the months of June and July, causing the tree or a portion of it to turn black; its leaves wither at once, as by a stroke of the sun, and frequently in a few days you may have your tree completely destroyed. Horticulturists have ascribed it to different causes; but whether it is produced by a superabundant flow of sap, causing a rupture of the vessels; by a stroke of the sun; or by a minute insect, (which we have no doubt is the true cause,) puncturing the sap wood, and eating it completely around the limb, so as to intercept the passage of the sap, the only remedy is to amputate the limbs below the effected part, and burn them. If the disease return, repeat the remedy.

The following are most desirable varieties, viz: Citron des Carmes, Jargonelle, Dearborn's Seedling, Julienne, Beuerre Bose, Beuerre Spence, Capeaumont, Cushing, Dix, Dutchess D'Angouleme, Rio de Wurtemburg, Hacon's Incomparable, Louise Bonne de Jersey, Marie Louise, Napoleon, Seckle, Bartlett, Beurre D'Aremberg, Beuerre Dial, Beuerre Rance, Beuerre Easter, Passe Colmar, Winter Crassane, Catillac, Pound.

The Plum.—This fruit succeeds best on a rich friable soil, with a dry sub-soil. The Plum is subject to the attack of a small insect called the curculio, which makes a semi-circular incision on the fruit and deposits its egg. The egg soon hatches, and the fruit drops, and the grub or larva leaves it. It enters the ground, from whence it emerges during the next spring in a winged form, ready to commence its depredations with the appearance of the young fruit. Various plans have been adopted to obviate this evil. Paving the ground to the extent of the branches of the trees has been found most effectual, by preventing the insect from entering the earth and finding a winter habitation. Also, by planting the trees in poultry yards, or in situations where the ground is much trodden. Plum orchards should always be planted where hogs and sheep can have access, the former will eat the fallen fruit containing the insect in a larva state; and the latter, by rubbing against the trees, leaves an odor peculiarly obnoxious to this insect. The following list embraces some of the finest varieties: Bingham, Caledonian, Coe's Golden Drop, Duane's Purple, Green Gage, Prince's Imperial Gage, German Prune, Jackworth's Imperatrice, Kirke's Plum, Orleans, Reine Claude Violette, Bolmer's Washington, Royal Hative, Huling's Superb, Semiana.

Cherries.—This tree is perfectly hardy and flourishes any where in the United States and almost on any soil. They prefer a rich loam. The best varieties are Knigh's Early Black, Davenport's Early Black, Large Black Biganean, Napoleon Biganean, Black Eagle, Sparhawk's Honey, Elton, Black Tartarian, May Duke, Plumstone Morello, Carnation.

Apricots.—This tree requires a rich mould. They will not flourish in sandy or cold damp soils. It is particularly liable to the attacks of the curculio; and requires the same treatment as the plum. The best varieties are the Early Red, Moorpark, Royal, Brussels and Peach Apricot.

The Nectarine requires the same soil and cultivation as prescribed for the peach. It is also subject to the attack of the curculio, with the other smooth skinned fruits. The best varieties are the Early Violet, Elruye, Perkins' Seedling and Red Roman.

Quince.—This is a most valuable fruit and should be more extensively cultivated. It flourishes most in a moist soil; particularly in situations near rivulets, but will accommodate itself to upland if not too sandy and dry, if the land is kept thoroughly cultivated. The best are the Large Orange, Portugal and Pear shaped.

Grape.—A deep, light, rich soil, upon a dry bottom, and a sheltered situation are most suitable for Grape Vines. To furnish directions for pruning and training would occupy too much space. For information I refer you to Kenrick, Downing, and other works upon the subject. It has been ascertained that the

foreign varieties do not succeed with us, unless cultivated under glass. For open culture, our natives are decidedly to be preferred. The best are the Isabella, Catawba, Bland's Virginia, Elsinburgh and Norton's Virginia Seedling.

Strawberry.—This being universally acknowledged to be the most delicious of the small fruits, I have determined to append a few practical directions with regard to its cultivation and the selection of the best varieties. In a deep rich soil the roots of the Strawberry penetrate eighteen inches or two feet. The soil, therefore, should be worked very deep, and a quantity of rotted manure well incorporated. Pulverize the ground thoroughly, and mark off your beds by a line in rows three feet apart, with an alley of eighteen inches. Set the plants in the rows eighteen inches asunder, and suffer the vines to extend so as to occupy the whole three feet space—observing to cultivate them two or three times during the spring and summer with the hoe, and exterminate the weeds and grass as they make their appearance. The alternate space of eighteen inches permit nothing to grow on, as this is designed as an alley for the gatherers to walk on. You may prepare your beds to any extent, by marking off the ground alternately in spaces of three feet and eighteen inches. The Strawberry will adapt itself to any rich soil so as to be productive; but the soil which it greatly prefers is a deep loam. The best varieties for our climate are: The Early Scarlet, Red Wood, Hudson Bay, Bayne's Prolific, Hovey's Seedling and Downton. We may also add the Alpine Monthly.

METEOROLOGICAL TABLE, FROM 28TH OCTOBER, TO THE 27TH NOVEMBER.

Kept at Schellman Hall, near Sykesville, Carroll co. Md. Taken at 6 o'clock, a. m., 2 o'clock, noon, and at 6 o'clock, p.m.

	Wind.			Temperature			Remarks.
28	W	NW	NW	43	53	45	Cloudy
29	W	W	W	34	55	50	Clear
30	W	W	SE	33	56	50	Frost Clear Cloudy
31	E	E	E	46	53	52	Rain
1	E	E	E	53	56	57	Rain
2	E	E	S	60	63	61	Rain 5 1-2 in. Cloudy
3	SW	SW	W	57	66	63	Fog Clear
4	W	NW	NW	57	57	53	Rain 1-2 in. Cloudy
5	NW	NW	W	43	56	51	Clear
6	NE	E	E	48	56	53	Cloudy fine Rain
7	E	NE	NE	48	53	54	Rain
8	E	E	S	57	61	60	Rain 2 1-2 in.
9	NW	W	W	58	70	63	Cloudy Clear
10	W	W	W	55	73	64	Clear
11	SE	W	W	55	64	60	Fog Clear Cloudy
12	N	N	N	50	63	53	Clear, Cloudy,
13	N	W	E	51	56	43	Cloudy Rain 1-10 in Clear
14	N	NE	E	40	46	43	Cloudy Rain 2-10 in Cloudy
15	E	W	W	44	50	50	Cloudy Clear
16	W	W	W	35	53	48	Clear
17	W	S	SW	43	59	53	Clear
18	SW	SW	SW	40	55	55	Fog Cloudy
19	S	S	S	50	54	49	Cloudy Rain 1 1-2 in.
20	W	NW	NW	53	46	43	Clear
21	NW	W	S	32	46	43	Clear
22	S	S	SW	35	51	45	Clear Cloudy Rain
23	NW	W	W	35	43	36	Clear
24	W	W	W	36	48	43	Cloudy
25	S	NW	W	43	42	33	Rain 1-2 in Cloudy Snow
26	NW	NW	NW	24	29	25	Ice Cloudy
27	NW			19			Cloudy

HARFORD CO. AGRICULTURAL CLUB.

To the Editor of the American Farmer:

DEAR SIR.—Below I hand you the proceedings of our Club on the 18th inst.

The lecture of Prof. Baer was listened to by a numerous and attentive audience, and gave great satisfaction. Its lucid and familiar style, striking experiments, and happy illustrations were well calculated to attract the curious, to enlighten the practical and to stimulate the spirit of improvement that is rife in this community. Our farmers are fast putting off the narrow prejudice that would regard science as an impertinent pretender, and already welcome her as a valuable fellow-laborer in the field

This is the "true faith," and will be fruitful in good works, enough to give us the high rank in the agriculture of the State at which we aim.

Yours truly, H.

Bel-Air, 24th Nov. 1846.

Nov. 18th. 1846.—The Harford Co. Agricultural Club met in pursuance of previous notice. Alexander Norris, Esq. was called to the chair, as President pro. tem. and H. D. Gough as Secretary.

Prof. Baer of Carroll Co. was introduced by the President, and at the request of the Club, delivered a lecture on Agricultural Chemistry.

After the address, it was unanimously

Resolved, that the thanks of the Club be tendered to Prof. Baer, for his able and eloquent lecture.

Resolved, that this meeting adjourn to the 2nd Saturday in December.

Resolved, that these proceedings be published by the Secretary.

A. L. JARRETT,
Sec. Harford Co. Agricul. Club.

MASTODON COTTON.

This is a new kind of Cotton, introduced into the United States a few years since by Mr. M. E. Abbey, of Mississippi. Those of our readers who have read the Journal attentively, have no doubt seen statements relative to it. What there is of this Cotton, is the product of three seeds, which Mr. Abbey said he obtained from some one from Mexico or California, four or five years since. Last winter, having seen some of the Cotton, brought by a friend from New Orleans, where it is sold at from 13 to 16 cents, while other Cottons were selling at 7 and 8,—and liking it much, we published such articles coming in our way calculated to enlighten our people in relation to it.

Below will be found a communication from our old friend, C. F. FICKLING, of Crawford county, in this State. It will be seen that Mr. F. purchased some of the seed last winter, and it sustains the high character heretofore given it by Mr. Abbey. He has sent us a sample, which can be seen at our office. Not having yet seen any Sea Island Cotton, we cannot make the comparison; but from the price paid for it, it cannot be very far inferior to it. Of one thing we believe all will agree, and it is, that it is far better than any of our Upland Cotton. Concerning its adaptation, and yield, in our climate, we know nothing more than we have seen from Messrs. Abbey and Fickling. The former we do not know; but Mr. F. we know well, and would rely upon his judgment as soon as upon that of any planter in Georgia.—*Georgia Journal.*

CRAWFORD COUNTY, Ga., Oct. 23, 1846.

To the Editor of the Georgia Journal.

MY DEAR SIR:—I have noticed a long article in your paper, from M. E. Abbey, of Miss., relative to the Mastodon Cotton, and a description of its seed. Mr. A. is correct in his statement. I visited New Orleans last Spring and obtained Mastodon Cotton seed, enough to plant 20 acres of land this year—they cost me $5 per bushel. The weed is large and bending with weight—the bolls are extremely large, and seem to mature finely in this climate—and I take this method of informing my friends and the public that I will be enabled to dispose of from one to two hun-

dred bushels of Mastodon Cotton Seed this winter at $2,50 per bushel.

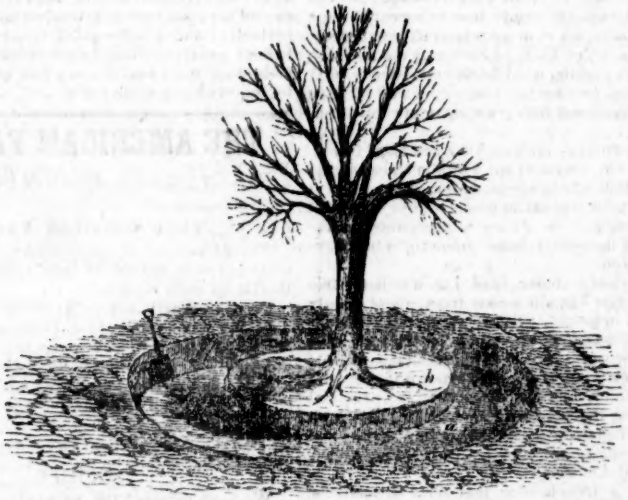
I am in hopes, sir, you will give this a place in your valuable paper, and that all other newspaper Editors in Georgia that have the least feeling for the farming interets of our State, will do the same. I have enclosnd to you a small sample of the Mastodon Cotton, with five or six seed of the same, for your inspection.

I remain with great respect,
Your friend,
C. F. FICKLING.

From Downing's "Horticulturist."

HOW TO RENOVATE AN OUTCAST.

BY J. B. W., NEW YORK.



It is very rarely that experiments are properly made or accurately reported. The following one, on a subject highly interesting to every cultivator of *Pear Trees* on the sea-board, appears to us highly satisfactory in both respects.

Such of our readers as are familiar with the Appendix on Fruits, are well aware that we do believe in the natural "running out" of varieties. In other words, we are confident that wherever a variety, once productive and excellent in a certain soil, fails, it is for the want of certain conditions necessary to its success. Either it has exhausted the soil of those constituents necessary to health and productiveness; or, if the tree is a young one, and immediately shows signs of decay, it is evident that it has been propagated from an unhealthy and diseased stock.

The hints we gave our correspondent below, were based on some chemical notions, which were only vague theory then, but which subsequent observations have given us greater confidence in. The renovating substances that we recommended in this case, were intended to be adapted to the peculiarities of the soil of J. B. W., but all the alteration which we are able, even now, to suggest for other sites, would be to substitute air-slacked *lime* for *charcoal*, in heavier soils, that are naturally deficient in the former substance.

The salts of iron, and especially *sulphate of iron*, has a specific action upon the disease which attacks, in unfavorable soil or climate, the epidermis of the pear and other plants, both on the leaf and fruit. Observations of the occasional results of blacksmith's cinders, applied to this tree, in various parts of the country, first drew our attention to this fact. We have already seen a paper, read before the Academy of Sciences at Paris, by M. BOUSSINGALT, bearing directly on the diseases of plants as affected by the salts of iron, which confirm and extend our own crude views on this subject. The substance of this essay, we shall, at some convenient moment, lay before our readers.

In the meantime, we beg the attention of our readers to the plain and simple mode adopted in the experiment below. If, as we are convinced, a tree, which some have condemned as an "outcast" from pomological society, may be renovated so easily as this, it is quite worth while to "spare" it. The quantities of the substances added to the soil to renovate it, were, it should be remembered, applied to a tree nearly *full grown*. One half, one fourth, or less, should, of course be used to trees of correspondingly less size and age.

A hint may be taken from this treatment of old trees, for the better culture of young ones on soil naturally unfavorable.—ED.

To the Editor of the Horticulturist.

You will remember the conversation we had together three years ago, about the apparently worn-out condition of my Virgalieu or St. Michael (*Doyenné*—ED.) pear trees. I spoke of them then, in the language of Knight and Kenrick, as "degenerate outcasts." Though they had once borne me excellent crops of fruit, which I have never seen surpassed, yet for several years they have only produced cracked, blighted, miserable fruit—indeed such as was absolutely worthless.

I remarked to you, that I considered the variety

worn out, and good for nothing in my neighborhood, and that I intended to cut down my trees, which were large and fine, and ought to yield every year several bushels.

My situation is a sheltered one in Westchester county; and after some inquiries about my soil, which is a light, though excellent, sandy loam, you told me that you believed the trees had exhausted the proper elements from the soil; that in consequence the fruit failed, and recommended me, instead of cutting them down, to renovate them.

Struck with the force of your reasoning at the time, which I have not leisure now to repeat to your readers, I determined to make a trial with two trees. I did so, in the fall of 1843. I have now the pleasure of repeating in writing, what I told you verbally, that I have now had two crops of beautiful fair fruit, as excellent as the finest that grew upon my soil twenty years ago.

As many persons about New York and Long Island, have trees of the Doyenné or Virgalieu pear in the same degenerate condition in which mine were, I comply with your request to give a simple statement of my proceeding with my trees, premising in the outset, that it is entirely based upon the hints I received from you.

In the month of October, 1843, I took in hand two large and thrifty Virgalieu pear trees, about twenty or thirty feet in height. I first scraped off all the rough bark, and coated the trunk of the tree over with a paint brush. I next cut out about one third of all the poorest branches, and shortened the head of the tree one-third, by "heading back" the principal limbs, covering the wounds after paring them, with tried,) recommended on page 32 of the "Fruits and the "shellac solution," (the best thing I have ever Fruit Trees of America."

I then dug a trench, four feet wide around the whole ball of roots, *b*, untouched about six feet in diameter. The roots—all the roots, large or small—that extended beyond this ball, I cut off; and I should judge that I cut off about one-third of the roots; or, as you advised me, about an equal proportion to the branches reduced.

The trench itself, which was four feet wide, I dug twenty inches deep; and carted away all the old soil from it to another part of my garden. I next carted in an equal quantity of soil from a field of good pasture, where the sod had not been broken up for several years. I drew this earth, composed pretty largely of the sod itself, and filled the trench around both trees.

To each tree I then applied the following substances, viz., two bushels of refuse or scoriæ from a blacksmith's forge, two bushels of charcoal pretty well broken, and two pounds of potash well pulverized. These substances I had on the spot, and mingled them with the fresh soil as it was put in the trench. After the trench was full of soil containing these stimulants, I had the whole of its contents thoroughly intermixed, by turning them over and over again with the spade. This is the whole of the process. Now a word about the results.

The first summer after the trees had been operated upon—that of 1844, I was surprised and delighted with the luxuriance and vigor of the new growth. It was very healthy, and had the appearance of that of a very fine young tree. Suffice it to say, the tree had formed a new and handsome head.

Next season, 1845, it blossomed moderately. But almost every blossom set, and gave me a fruit. Every fruit, to my great joy and satisfaction, was large, fair and smooth; the growth was clean and healthy, and the leaves dark green in color.

This year, I have had a fine crop: two bushels from one tree, four bushels from the other. They were superb fruit—genuine, old-fashioned Virgalieus; and I cannot doubt that my trees will continue to bear such for many years.

I need not say, that I and many others are convinced by this experiment, that the pear tree, of many sorts in my neighborhood, have failed from a want of proper sustenance in the soil. Whether the receipt you gave me, may be improved upon or not, I cannot say; but I can say, that, so far, it has answered perfectly; and it is my belief that every old and enfeebled pear tree, that bears cracked fruit, may be restored to good health and a fine bearing condition by following the same rules. J. B. W.

THE AMERICAN FARMER.

BALTIMORE, DECEMBER, 1846.

The American Farmer.

The 2d volume of the new series of this journal commenced on the 1st of July, 1846—It is issued on the 1st of each month.

Terms:—Single copies $1—Six copies for $5—Thirteen copies for $10.—Thirty copies for $20.

Sample Nos. will be sent to any one desirous of aiding in the circulation of the "*Farmer*."

Address SAMUEL SANDS,
122 Baltimore Street, Baltimore.

PRINCE GEORGE'S CO. AGRICULTURAL SOCIETY.

We have received the proceedings of this spirited Society, at its sixth annual meeting, held at Upper Marlboro' on the 28th Oct., and we are highly gratified to learn that it was better attended than upon any former occasion. It would, indeed, be "passing strange" if an association so eminently calculated to advance the interests of the planting and farming interests, had not gained strength with each succeeding year, located as it is in one of the oldest and most wealthy counties of our state. Patriotism brought it into being, and the liberality of the principles upon which its constitution is based, backed as those principles have been by a high order of intelligence, and an enterprise too elastic to succumb to difficulties, have not only thus far vouchsafed a healthful existence, but offers to its friends a sure guaranty for its long continued usefulness. That it may increase in power until its benefits and blessings shall extend throughout the limits of that good old county, is our most fervent prayer. Nay, that the glorious example of its founders and supporters may be followed in every county in Maryland where a society does not already exist; for we are very certain that a better means of advancing the agricultural interests, could not be devised by the ingenuity of man, nor could there be one more worthy of the sustaining hand of public spirit.

The address of Dr. *John H. Bayne*, delivered upon the occasion, is one of the best and most accomplish-

ed productions of the kind we have read for many years. The matters treated by him are full of interest, are discussed with great perspicuity of thought, propriety of diction, and with a profound knowledge of the sciences connected with the several subjects which he so happily brought to the consideration of his audience. We commend its perusal to every one who can enjoy an intellectual treat, whose every sentence breathes a scientific truth, and whose greatest beauty is simplicity.

The reports of the several committees will be given in our next.

THE ACTION OF CHARCOAL AS A MANURE.—Charcoal being an insoluble substance, the question is often asked, how can it act as a manure, vegetables being only able to take up such food, through their roots and spongioles, as may be presented to them in a liquid form? True, Charcoal is an insoluble substance, and therefore, cannot, of itself, be taken up into the vegetable system; but it can and does act as a caterer, or provider of manure for vegetables. It absorbs ammonia from the atmosphere, and possesses, according to Liebig, above all other substances, the power of condensing the ammonia thus absorbed within its pores. When heated to redness, it absorbs 90 times its volume of ammoniacal gas, which by the first succeeding rain is separated from it, descends into the earth in a fluid state, and thus becomes the direct food of plants. While the charcoal being relieved of its burthen is ready to re-absorb and condense another body of ammoniacal gas, to be held in reserve, and conveyed by the next succeeding rain into the earth, there again to furnish a new supply of food for plants.

HARFORD COUNTY BLUE LIMESTONE.

We insert below, a paper from the pen of Mr. *Joseph Roberts, Chemist*, containing an analysis of a specimen of what is termed the Harford County Blue Limestone. The analyst has been made with accuracy, and the analysis accounts, in our opinion, very satisfactorily for the reason why there should be great caution exercised in burning it, as owing to the presence of *silica*, vitrification is apt to ensue under the action of white heat. His suggestions too, with regard to the cause of the prompt action of lime burnt from this stone, are worthy of full consideration, as they appear to us to be based upon philosophic principles. Thanking the analyst for his very able remarks, we commend them to our readers.

Analysis of the Blue Limestone of Harford County.

Lime,	50 73
Carbonic acid,	38 27
Silica,	7.50
Black oxide of iron,	1.25
Water,	1.00
Loss,	1.25
	100 00

The silica contained in the limestone, may be serviceable by rendering the lime, prepared from it, (the limestone) more porous and consequently more permeable by the atmosphere, water, and all other agents, having a hand in preparing it for its final assimilation, with the organs of plants; and that it will have this effect, there can be but little room to doubt, it being well known that lime when exposed to the air, rain, etc. soon becomes a carbonate, and almost insoluble in pure water; but soluble in water impregnated with carbonic acid (as rain water always is), thereby becoming a super carbonate (a soluble salt), and in this form it is absorbed by the growing plants. The silica, then, by dividing the particles of this lime, and thus exposing a greater surface to the action of the solvent and atmosphere, causes the lime, the sooner to change its caustic for its carbonated state, and from that to pass into its soluble form. This reasoning is based upon the presumption that it will meet with no sulphate of iron or other salt, capable of decomposing and of being decomposed by it; but even in this case, the greater part of it will be utilized by nature, in the manner before indicated. Thus we see that the lime prepared from this limestone changes its caustic for its soluble form, and becomes food for plants sooner than that prepared from the pure white limestone. However as the lime made from the latter retains its caustic state (this being the only form in which lime acts as a promoter of the decomposition of organic matter) longer, it will be found to be more valuable on soils rich in undecomposed vegetable matter.

In burning limestone, containing much either of silica or alumina, it is necessary to use the lowest heat that will cause the limestone to part with its carbonic acid (red heat) otherwise it will become vitrified by the union of the silica or alumina, as the case may be, with the lime; this takes place at about white heat. With much respect,

JOS. ROBERTS.

To Samuel Sands, Esq.

PHILADELPHIA, 11th Mo. 6th, 1846.

To the Editor of the American Farmer.

Reading an article in the last paper of the American Farmer, on the cultivation of the pea, and observing that the only remedy for preventing the injury of the Bug to the dry pea, was late planting; I will state the result of an experiment I tried some years ago. The common garden pea, which we planted, had almost universally a hole in them; which had been so for many years, that many persons thought they would not grow without; and I have heard say of some that would not eat peas for fear of eating Bugs. Having discovered in the green pod after it had attained its full size, a small speck opposite each pea, which I found to be the egg from which was produced, through different stages of growth, the bug, which had done so much injury to and cause of much merriment about eating Peas. The remedy that I tried, was to gather them as soon as they were fully ripe and perfectly dry, to put them in bottles and cork them air tight, which prevented the growth of this insect, for on opening them in the spring to plant there was not a bug to be seen. The philosophy of the experiment to me, was, that no insect or animal could live and grow without air.

J. E.

NEW YORK FARMERS' CLUB.

Yesterday an adjourned meeting was held at the Repository in the Park, Judge LIVINGSTON in the Chair. The Secretary read a letter from Calvin

Post of Tennessee, on Metals found in that region. A rich vein of Tin ore has been discovered by this gentleman. He has also found Zinc ore which he believes to be rich in Silver. Of these he is ready to send specimens, if desired—a communication was next read from Jeseph Arnold of Esopus, on the Diseases of the Potato.—Mr. WAKEMAN read from an English periodical an account of an analysis of the water contained in healthy and in the diseased Potatoes, interspersed with remarks of his own, which finally gave rise to a discussion between Messrs. Van Wyck, Underhill and the Chairman.—Prof. MAPES remarked that the red Potato, which has been extensively used in our refectories and elsewhere for several years, appears to have been taken originally, five years ago, from South America—the potato itself was planted here, and not the seed merely.—Messrs. Van Dyck and Underhill followed with statements of various facts, and conjectures as to their cause.—Dr. FIELD made observations going to prove, with the arguments of gentlemen who had preceded him, that Potatoes planted early in the season are exempted from decay; those planted at a middle period were, in his own experience, very much injured by the rot. From these circumstances he had inferred that there is a particular period at which Potatoes are inclined to rot—that before and after this period no symptoms of decay are observable.—Judge VAN WYCK thought it a bad plan to dig potatoes early and put them in cellars. They are better left in the ground—covered by from 4 to 6 inches of earth, according to the severity of the season—until the frost is too severe for them, and then it is time to house them.—Mr. DYE of Seneca Co. rose and made a number of observations on Potatoes generally, and one case in particular—in which he had planted his Potatoes in the last week of April, dug them up in the first week of the following July, and had a constant supply of very large ones for a long time. They were planted on an originally low piece of ground, reclaimed and rendered so productive by being covered with a large quantity of chip-stuff. For the piece of ground, the crop obtained was an uncommonly large one, and not at all diseased. Perhaps this last was owing to the chip-stuff so plentifully supplied.—Judge MEIGS read a statement of the prodigious quantity of 200 bushels of Californian Rye being obtained from one acre.—Prof. MAPES remarked that the principal ingredient in the Potato was fecula, which, when found in a natural state, is always in small spheres, and these, when wetted, swell and burst, and becomes slippery and slimy. Under other circumstances than moisture, this property does not become apparent. The Professor showed that the formation of acetic acid is a cause of the rot in the Potato, and that in devising remedies, the means of destroying this acetic should be taken into consideration. One remedy he had found to be the application of artificial carbonate of lime to the upper surface of the plant.

A discussion then arose between Prof. M., Dr. Underhill and Dr. Field, on the relative virtues of Lime and Chalk as manure for crops. Chalk is decidedly better than Lime, was the opinion finally agreed upon.

The regular subject then came up for discussion—The noxious influence of the Gases from Brick-Kilns on Vegetation. Dr. UNDERHILL stated an instance that he had known in which an orchard within half a mile of a kiln was nearly ruined by the gases. If there is no fog, dew, or rain at the time the gas passes over, little or no injury is done to the vegetation. But when the gas settles, on a tree for instance, the *sap* appears injured as well as the leaves and fruit, the latter being rendered knotty and crisped, as it were. When fruits are in blossom, he fully believed that the gases will have their effect at a distance of ten or fifteen miles from the kiln. Samples were laid on the table of leaves of the Newtown Pippin, the Sugar-Beet, Carrots, and several trees, in which redish holes were cut and in others the withered appearance of having been subject to a strong heat was produced—solely by influence of these gases, which affect all orchards, but especially the Newtown Pippin, because of its more delicate nature.—Prof. MAPES said that as the Doctor's observations had every appearance of accuracy, a *rationale* might be deduced therefrom. A solution of alum applied to plants kills them immediately. Alum is sulphate of alumia and sulphate of potass; a combination of various ingredients produced in brick-kilns forms alum, which is sent out constantly from the furnace in infinitessimal quantities, and precipitated on all vegetation in its reach. The gases will not travel ten miles, but the *alum* may be carried to that distance by mixing with the atmosphere.

Mr. FIELD made some remarks on the deleterious effects of Sulphur on vegetation as observed by himself while burning a small quantity in his garden.

The Secretary read a translation account from a French periodical of the most Northern Garden in the world, and on the Vegetables cultivated at Bossekop, Elvebakken, Kaafiord and Talvig in Lapland. These four villages are situated around the Fiord of Alten, a long and narrow gulf which penetrates deep into the land. It is situated in lat. 70° North and in lon. 21° 10′ East. The climate is very rigorous; the medium temperature does not surpass the point of congelation. In a botanical point of view, the Winter of that climate is seven months, Summer three months, Spring and Autumn one month each. The plants of Alten accomplish all their growth in the space of five months. They awake in May from their Winter sleep, but it is not till July that they keep their increased growth, for it is then only that the temperature does not descend below the freezing point. This month is, in temperature, like April in Paris.—A letter was read, by request of Mr. Van Wyck, on the propriety of building nests for wrens, which are very serviceable in ridding the land of worms.—After some discussion, the subject for the regular meeting on next Tuesday was announced.—*N. Y. Tribune.*

PRESERVATION OF APPLES.

We think the following extract from DOWNING'S "Fruits and Fruit Trees of America," furnishes the best answer that can be given to the various inquiries we have received in relation to preserving apples.

In order to secure soundness and preservation, it is indispensably necessary that the fruit should be gathered by hand. For winter fruit the gathering is delayed as long as possible, avoiding severe frosts, and the most successful practice with our extensive orchardists is to place the good fruit directly, in a careful manner, in new, tight flour barrels, as soon as gathered from the tree. These barrels should be gently shaken while filling, and the head closely pressed in; they are then placed in a cool shady exposure under a shed open to the air or on the north side of a building, protected by a covering of boards over the top, where they remain for a fortnight, or until the cold becomes too severe, when they are transferred to a cool, dry cellar, in which air can be admitted occasionally in brisk weather. A cellar for this purpose, should be dug in dry, gravelly, or sandy soil,

with, if possible, a slope to the north; or at any rate with openings on the north side for the admission of air, in weather not excessively cold. Here the barrels should be placed on tiers *on their sides*, and the cellar should be kept as dark as possible.

When apples are exported, each fruit in the barrel should be wrapped in a clean coarse paper, and the barrels should be placed in a dry, airy place, between decks.

From the American Quarterly Journal of Agriculture and Science.

THE HESSIAN FLY.

BY ASA FITCH, M. D.

The insect which we are about to consider, has for a long period been, at times, a severe scourge, in every district of our country. It is more formidable to us, says Dr. B. S. Barton, than would be an army of twenty thousand Hessians, or of any other twenty thousand hirelings, supplied with all the implements of war. Hence it has forced itself prominently to the notice both of agriculturists and men of science. No other insect of the tens of thousands that teem in our land, has received a tithe of the attention, or been chronicled with a tithe of the voluminousness that has been assigned to this species. Our scientific journals, our agricultural magazines, and our common newspapers, have each accorded to it a conspicuous place in their columns. As may well be supposed, almost every point in its history, has by one and another of its observers, been closely investigated, and laid before the public. Very little that is new, can therefore at this day be embodied in an account of this species. The most that an observer can accomplish, is to add his testimony in confirmation of facts that have been already announced. The most that a writer can aim at, is to gather the various papers that are scattered through volumes sufficiently numerous of themselves to form a library, sift from them whatever they contain of importance, and arrange the facts thus acquired, into a connected and symmetrical memoir. Such is the object of the present essay; to carefully review the various accounts that have been hitherto published, extract from each the items of value which it contains, compare these with personal observations made under favorable circumstances during the past twelve months, and with the materials thus acquired, write out a history of this species, more ample in its details than any that has been hitherto attempted, and containing a complete summary of all that is known of this insect down to the present day.

It is a European Insect.

For several years subsequent to the first appearance of the Hessian fly in this country, it was universally believed to have been derived from abroad. When, however, the severe devastations which it was committing upon this continent became known in Europe, public attention was so strongly excited as to lead to an extensive and thorough search for the insect there. The result of this investigation, as given by Sir Joseph Banks in his report to the British government, was, that "no such insect could be found to exist in Germany or any other part of Europe." It was in consequence, received as an established fact, and assented to on all hands, that this was an exclusively American species. Of late years, however, new light has been shed upon this subject; and we now proceed to detail the evidence which induces us to believe that the Hessian fly is indeed a European insect.

It would appear that this insect, or one identical with it in its appearance and habits, did exist, and commit severe ravages in Europe, long anterior to its appearance in America. In Duhamel's *Treatise of Practical Husbandry* (London, 1759, 4to. p. 90,) and also in his *Elements of Agriculture*, (Lond. 1764, 8vo., vol. i., p. 269,) after alluding to a worm in the root of oats, he says, "I suspect it to have been an insect of this kind *that destroyed so much wheat* in the neighborhood of Geneva, and which M. de Chateauvieux describes thus: 'Our wheat in the present month of May 1755, sustained a loss, which even that cultivated according to the new husbandry has not escaped. A number of *small white worms* have been found on it, *which*, after a time, *turns to a chesnut color*; they place themselves *betwixt the leaves* and gnaw the stalk; they are commonly found *betwixt the first joint and the root*; the stalks on which they fix are immediately at a stand; they *grow yellow and wither*. The same accident happened in 1732: these insects appeared about the middle of May, and did so much damage that the crops were scarcely worth anything.'" This account, though perhaps too brief and imperfect to justify a decided opinion, corresponds much more exactly with the Hessian fly, than with any other insect of which we have any knowledge. Acquainted with it as our men of science in this country were, we are surprised they so readily and unanimously succumbed to the sentiment that the species was indigenous to America.

In 1788, as we are informed in the *Encyclopædia Britannica*, (art. Hessian fly. § 5,) the Duke of Dorset addressed a letter to the Royal Society of Agriculture in France, enquiring if the Hessian fly existed in that country. "The report of the society was accompanied with a drawing of two insects, one of which was supposed to be the caterpillar of the Hessian fly, from its attacking the wheat only in the herb; beginning its ravages in autumn, reappearing in the spring, and undergoing the same metamorphoses." From an obscurity in the phraseology of the subsequent paragraph, and a reference therein to the memoirs of the Stockholm Academy, a doubt is excited, whether the society did not regard the Hessian fly as identical with the *Oscinis frit* (Linn.) Lat., which infests the ears of barley in Sweden, and consequently whether the French species was not the latter. But, as the society regarded their insect to be the Hessian fly, it is somewhat singular that its history was not investigated and distinctly recorded, before the announcement was so confidently put forth, that this species could not be found in Europe.

But, more recently, clearer evidence upon this point is furnished us. Mr. Henrick, in his valuable article in *Silliman's Journal*, (vol. xli. p. 154,) informs us, that Mr. J. D. Dana, who had been much associated with him in making a thorough investigation of the habits of the Hessian fly and its parasites, being on a voyage in the Mediterranean, "on the 13th of March, 1834, and subsequently, collected several larvæ and pupæ, from wheat plants growing in a field, on the Island of Minorca. From these pupæ were evolved on the 16th of March, 1834, two individuals of an insect, which his recollections (aided by a drawing of the Hessian fly with which he was provided,) enabled him to pronounce to be the *Cecidomyia destructor*. More of the perfect insects were evolved in the course of the month, one of which deposited eggs like those of the Hessian fly. In letters, dated Mahon, April 8 and 21, Mr. D. sent me five of the insects, and several of the pupæ. They arrived in safety, and after a careful examination, I saw no

good reason to doubt the identity of this insect with the Hessian fly. The Mahonese asserted that the insect had been there from time immemorial, and often did great damage both there and in Spain." And further, "on the 28th of April, 1834, Mr. D. collected from a wheat field just without the walls of Toulon, in France, several pupæ and one larvæ like those before obtained. On the 4th of June, 1834, he obtained similar pupæ from a wheat field near Naples." We doubt whether there was living, at that day, two persons better qualified to determine the identity of these insects with the Hessian fly, than Messrs. Herrick and Dana. Testimony from such a source needs no comment.

Finally, the year previous to that in which Mr. Dana made the above examination, it appears that the wheat crop in some parts of Germany, were seriously injured by an insect which was generally regarded as the Hessian fly. M. Kollar, of Vienna, in his treatise on injurious insects, (London, 1840, p. 119,) relates that in the autumn of 1843, complaints were made that the wheat on the estates of his imperial highness, the Archduke Charles, at Altenburg, in Hungary, had been considerably injured by an insect, of which the following account was forwarded to the archducal office. "Till the end of May the wheat was in excellent condition, but about the commencement of June, the ears began to hang down, and the stem to bend, and in a few days patches appeared in different parts of the fields which were of rather poorer soil than the others, with the plants entangled and matted together, as though lodged by heavy rains. . . . More than two-thirds of the straw was lodged in less than a week; and the heavy rains which fell in the latter half of June, so fully completed the work of destruction, that the wheat fields looked *as if herds of cattle had gone over them.* The cause of this damage was sought for, and we soon discovered at the crown of the root of each of the wheat plants, or at the first joint, within the sheath of the leaf, whole clusters of pupæ of an unknown insect. Those plants, the roots of which had been attacked, died off; and the spot to which the insects had fastened themselves on the still soft straw within the sheath of the leaf, was found to be brown, withered, and tough, yet *without any apparent wound.* The straw which had become lodged, produced small ears, with few and imperfect grains, which ripened with difficulty, and the straw was twisted, and of a very inferior quality."

Nearly a hundred miles south-west of Saxe-Altenburgh, a similar account is simultaneously given by Baron Von Meninger, agricultural director of the Duke of Saxe-Coburg. According to his report, "In the fields of Weikendorf, and other neighboring localities, caterpillars were found which had devastated whole fields. These caterpillars had their first abode near the ground, in the first joint of the straw, where they were found in whole families, in a sort of nest. The largest were about the length of two lines. Their color was pale green, with a small black dot above. . . . . The straw became dry at the first joint, and fell over or leaned on its neighbor. The upper part of the straw received its nourishment from the atmosphere alone, and the ears formed: but they continued in a sickly condition, and could only produce small, shrivelled grains. The life of the caterpillars (their duration as naked worms?) appeared to be from about twenty-four to thirty days. As the straw ripened, the insects changed their color into a brownish hue, shrivelled up, and finally disappeared."

M. Kollar, who seems to have known nothing of the American history of this insect beyond what he gathered from Mr. Say's brief account, obtained some of the diseased straw from Germany, in which, he says, "many of the brown pupæ were found. I opened the pupæ-case, and was able to determine with great probability, partly from the form of the pupæ, and partly from the unchanged caterpillar in the pupæ-case, that it must be a small fly. I only ascertained this from the minute description and drawing of the insect from Mr. Thomas Say, in a North American journal, in which a stem of wheat, with the pupæ within it, is exactly represented as I have seen our wheat.

Mr. Westwood, in a note appended to this account, says, it is perhaps questionable whether the species, of which the above details are given by M. Kollar, is identical with Say's *Cecidomyia destructor.* He even intimates a doubt whether the European species is a Cecidomyia, for, from all that had been observed, this genus in its pupæ state, is naked, like the other Tipulidæ, and not enclosed in a case. Having himself received specimens from Dr. Hammerschmidt of Vienna, and still in the straw near the roots, he found the insect "enclosed in a leathery case," on opening which, he discovered the *larva* shrivelled up and dead. Now this nice point, so particularly noted, and so strikingly showing the acuteness of discrimination possessed by that eminent naturalist, we think must dispel the last lingering doubt as to the identity of the American and European insects. As will fully appear in a subsequent part of this paper, the Hessian fly presents this singular anomaly, that its pupæ is coarctate, or enclosed in a case like those of the *other families* of dipterous insects, but *unlike* all the pupæ of the Cecidomyians and other Tipulidæ that have been hitherto observed! The very fact, therefore, which leads Mr. Westwood to suspect the European insect is not a Cecidomyia, all but demonstrates that *it is the Hessian fly.*

Its Introduction into America.

The existence of the Hessian fly in Europe being premised, so many circumstances conspire to render it probable that it was introduced into this country in the mode originally supposed, that scarcely a doubt can now be entertained upon this point.

When the habits and transformations of the insect itself are considered, it will be perceived that these interpose great obstacles to its being transported across the Atlantic, at a period when two months or more were required for the voyage. Its passing through two generations in a year, make its continuance in ony one stage of its existence comparatively brief. The first of these generations occupies about seven months, from October to April inclusive. This generation is nurtured at the roots of the young plants and there is no probability that any of these plants would be taken up, so that the insect could thus be conveyed away. The second generation is nurtured in the lower joints of the straw. The worm attains maturity in May, becomes a dormant "flax seed" in June, continues in this state till August, when the fly comes out to deposit its eggs in September. Though most of these flax seeds remain in the stubble when the grain is harvested, numbers of them are so high in the straw, as to be gathered with it. But they are so firmly imbedded in the straw, and enveloped with the sheathing base of the leaf, that it must be rare that any of them are detached by the flail in threshing, so as to find their way among the grain, and thus with it be carried to a distance. As the flax seeds moreover, evolve the perfect insect in August,

it must be equally rare that a solitary fly comes from the straw after that date. These facts clearly show that there is *but one mode* and *but one month in the year*, in which this insect could probably have been conveyed to this country at that time, to wit, *in straw*, landed upon our coast *in August*. If landed at a later date, the flies would have completed their transformations, and made their escape, or perished in their confinement; if earlier, there is no probability that the straw could have been of the growth of that year, consequently it would have contained no live insects. Our present knowledge of the habits of this insect thus affords us a singularly accurate test, for ascertaining the truth of the original theory respecting the mode in which it was introduced.

And how do the facts furnished us by the military history of those times, accord with what we have seen to be almost essential contingencies to the importation of this insect? Early in July of the year 1776, General Sir William Howe arrived on the New York coast from Halifax, with the troops which had evacuted Boston, and debarked upon that part of Staten Island which lies within the Narrows—one of the reasons which induced him to make this part of the continent the central point of his operations being, that "Long Island was very fertile in wheat and all other corns, and was almost equal alone to the maintenance of the army." (*Bisset's Hist. Geo. III.*) We are informed in *Marshal's Life of Washington*, (vol. ii., p. 424,) under the date of *August*, 1776, that "the reinforcements to the British army were *now* arriving daily from Europe." Lord Howe's strength was hereby augmented to twenty four thousand men, about half of whom (as is probable from the statement, page 416,) were newly arrived "Hessians and Waldeckers." The most of these were from Hesse Cassel, a district but about a hundred miles distant from Saxe-Coburg and Saxe-Altenburg, where as we have already seen, the same insect did much damage to the wheat crops in 1833 And again, under the date of August 25, (p. 437,) it is stated, that "*on this day*, General De Heister landed with two brigades of Hessians. The next day he took post at Flatbush," on Long Island, about six miles distant from the main encampment on Staten Island.

In juxtaposition with this account, let us now place the statement of one, who, Sir John Temple, the British Consul General at New York tells us, "had been more curious with respect to this insect, than any other person with whom he was acquainted." Says Col. Morgan, (*Encyc. Brittan.*) "the Hessian fly was first introduced into America, by means of some straw made use of in package, or otherwise, landed on Long Island, at an early period of the late war; and its first appearance was in the neighborhood of Sir William Howe's debarkation, and at Flatbush." So many circumstances concur to evince the truth of the account here given by Col. Morgan, to its very letter, that we think no one will hereafter hesitate to give it full credence.

We have searched in vain for the date of the embarkation of the Hessian troops, or the number of days occupied by them in crossing the ocean. It is possible they may all have left Europe anterior to the harvest. But in Germany, as in this country, as is shown by M. Kollar's statement, the infested straw becomes broken and tangled, and turns yellow, early in June. Had a company of soldiers needed straw for package, no objections would have been made to their going into a field of this kind, and with a scythe, gathering what they required, weeks before the usual time of harvest.

We have nowhere met with but one statement, which goes directly to prove that this insect is indigenous to this country, or existed here anterior to the arrival of the Hessian troops. The late Judge Hickock of Lansingburgh, N. Y., in a communication to the Board of Agriculture in the year 1823, and published in the memoirs, (vol. ii., page 169,) says, "a respectable and observing farmer of this town, Col. James Brookins, has informed me, that on his first hearing of the alarm on Long Island, in the year 1786, (doubtless, 1776 is intended,) and many years before its ravages were complained of in this part of the country, he detected the same insect, upon examining the wheat growing on his farm in his town" If this insect, observed by Col. Brookins in 1776, was the genuine *destructor*, it is a little singular that to betray its real character, it patiently awaited some fourteen years, to be reinforced by its kindred from Long Island, who reached it by regular advances made year after year—that on their arrival, and not till then, it acquired the skill and courage to go forth and lay waste the crops through all this section of country for several successive years. The strong probability is, that it was some other insect which was found by Col. Brookins.

Its Civil History and Bibliography.

We now proceed to adduce such facts as we have been able to collect, respecting the devastations of this insect in different years, or in other words, to trace out with as much precision as the data before us will enable us to do, its civil history, from the period of its first appearance, down to the present time; and in connection with this, to notice the different memoirs and other papers of value that have been published respecting it, so far as we have had an opportunity of becoming acquainted with them.

Anterior to the revolutionary war, the Hessian fly was unknown in this country. No allusion to an insect of this kind has been found in any American work, or in the journal of any foreign traveller, nor since its appearance has it been intimated that any of our citizens had ever observed it previous to that time.

All accounts concur in stating that its first appearance was upon Staten Island, and the west end of Long Island. There is some discrepancy between writers, as to the particular year in which it was first observed. Dr. Mitchell states (*Encyc. Britan.*) that "it was first discovered in the year 1776." The ravages of this insect, however, are so much more conspicuous and liable to attract attention from the broken and tangled condition of the straw as it approaches maturity in June, than they are when a portion of the young shoots are discolored and withered in October, that there can be little doubt but it would first be observed at the former period. Had Dr. Mitchell, therefore, received definite information upon this point, it would doubtless have been coupled with the statement, that it was noticed at or before the harvest in that year, and consequently anterior to the arrival of the Hessian troops—which fact, he, confident as he was that this was an indigenous insect, would not have failed triumphantly to have stated. It is hence believed, that Dr. M. has assumed this data, from the current report that this insect was introduced by the Hessian soldiers, knowing this to have been the year of their arrival.

From the "flax-seeds" casually lodged in the imported straw, only a few flies would probably be evolved, to deposit their eggs upon the young wheat in the autumn of 1776; nor would these have multiplied to such an extent in the following spring as to at-

tract attention at the time of harvest. But, increasing with each successive brood, by the harvest of the following year, 1778, we might anticipate its being observed, and by a year thereafter, it would become so numerous, that its real character would no longer be in doubt. And in accordance with this, we are informed by Colonel Morgan, that "the fly made its first appearance in 1778:" and Mr. Clark, who in 1787 went to Long Island expressly to gather authentic information respecting this insect, says in his report, "on the best enquiry I could make, during my stay there, I satisfied myself in the following particulars, namely; first, that the Hessian fly made its first appearance there about the year 1779, so as to injure, and in some cases destroy their crops of wheat." An anonymous writer in *Carey's Museum*, (vol. i., p 143,) gives the same year as about the period of its discovery.

We therefore regard the year 1779 as most probably the date when its ravages actually commenced. The crops of wheat were severely injured or wholly destroyed by it in King's and Richmond counties, during several of the following years; and each succeeding generation regularly enlarged the sphere of its devastations in every direction.

Quite early in its history, the important fact became accidentally discovered, that certain varieties of wheat are capable of withstanding its attacks. In the year 1781, a prize schooner loaded with wheat, was taken in the Delaware river and carried into New York, whence the cargo was sent to the mill of Isaac Underhill, near Flushing, Long Island, to be ground. Mr. Underhill's own crop of the previous year having been so entirely destroyed that he had no grain for seed, he took what he required for sowing from this cargo, and reaped therefrom upwards of twenty bushels per acre, whilst few of his neighbors for miles around had any to reap, so calamitous were the operations of the fly. To his praise be it recorded, he distributed his entire crop, in small quantities, and at a moderate price, among his neighbors, for seed; and all who made use of it were similarly successful. The "Underhill wheat" at once became noted, for effectually resisting the attacks of the fly, and for many years subsequently, as we shall have frequent occasion to notice, was eagerly sought for and successfully cultivated, where all other varieties of this grain failed. (*Vaux and Jacobs, Clark.*)

In 1786, the fly first reached Col. Morgan's farm, at Prospect, New Jersey, about forty miles southwest of Staten Island. It was first observed in May, and by October was so increased, that some farmers in Middlesex, Somerset, and Monmouth counties were induced to plow up their young wheat and sow the fields to rye. Other fields, less injured, were allowed to remain until the succeeding spring, when their appearance was so disheartening, that many of them were ploughed up and sowed with spring grain.

Eastward its progress would appear to have been much more rapid than towards the west and south, for this same year it had reached a hundred miles, nearly to the east end of Long Island, and was detected on Shelter Island. "It was first perceived a little before the harvest, and appeared to have come from the west end of Long Island, in a gradual progress of between twenty and thirty miles in a year. Before the harvest the species appeared to be few in number, but in the fall it was found to have greatly increased, and appeared in great numbers on the green wheat, and was observed to do most injury to that which had been most early sown." (*Harens*, p. 71.)

Public attention was now becoming strongly directed towards this formidable foe. The New York Society for Promoting Useful Knowledge, issued an advertisement, requesting information respecting it. Two communications were soon received by them, and were directed to be inserted in the secular papers. These are the first published documents on the fly, that have occurred to our notice. They were copied into *Carey's American Museum*, (Phila. vol. i., p. 324–326.) One of them, dated New York, September 1, 1786, gives a brief but pretty accurate account of the situation and habits of the insect, particularly in fall and spring. The other, dated Hunterdon, New Jersey, January 1, 1787, after hastily alluding to its habits, proposes as remedies, late sowing, on rich land: drawing elder bushes over the young plants, and passing over the wheat with a heavy roller to crush the worms.

In the *Pennsylvania Mercury* of June 8, 1787, is published a letter from Col. George Morgan, addressed to the Philadelphia society for promoting agriculture. He suggests the importance of their appointing some competent person to fully investigate the habits of the Hessian fly, and the remedies to protect from it, after the example of the Paris Academy of Sciences, which had commissioned Messrs. Duhamel and Tillet to enquire out the history of the Angoumois grain moth; he alludes to contradictory reports respecting the Underhill wheat, copies the paragraphs already given, from Chateauvieux, as "answering in every respect to our Hessian fly," and gives an account of the ravages of the insect in his vicinity, and its habits so far as observed.

The *Mercury* of September 14th, contains another letter from Col. Morgan, correcting some inaccuracies in his previous communication, and giving some additional interesting items. He says, "those who are doubtful whether the fly is in their neighborhood, or cannot find the eggs or nits in the wheat, may satisfy themselves by opening their windows at night, and burning a candle in their room. The fly will enter in proportion to their numbers abroad. The first night after the commencement of the wheat harvest this season, they filled my dining room in such numbers, as to be exceedingly troublesome in the eating and drinking vessels. Without exaggeration, I may say, that a glass tumbler, from which beer had been just drank at dinner, had five hundred flies in it, within a few minutes. The windows are filled with them when they desire to make their escape. They are very distinguishable from every other fly, by their (having) horns or whiskers."

Accompanying Col. Morgan's letter is a brief report, made by Thomas Clark, who, at the request of his neighbors had gone to Long Island, to gather correct information respecting the fly, and the means of escaping its depredations. He became well satisfied that the Underhill wheat was fly proof, and could be obtained in any desired quantities, at the moderate price of $1 25 per bushel. He also reports the interesting fact, that the fly had now become so reduced in its numbers on the west end of Long Island, that many of the inhabitants supposed there had been none the present year, though he himself saw it there quite common still. Since 1779 their crops had been destroyed more or less every year, until the present.

In 1788, a communication in *Carey's Museum*, (vol. iv., p. 47,) from Buck's county, Pa., informs us that in the vicinity of Trenton, N. J. so much as the seed sown would not be harvested. Many farmers had plowed up their wheat crops in the spring, and planted them with corn. The fly also in this year com-

menced its ravages in the state of Pennsylvania. "Near seed-time last year, many persons on the Pennsylvania shore saw the insect so thick in the air as to appear like a cloud, coming over Delaware river."

Following this communication, is a paper signed "a landholder," who regards the eggs as laid in the grains of ripe wheat, and sowed with them; and proposes procuring seed from places not infested with the fly, as a remedy.

Messrs. Vaux and Jacobs, farmers of Providence, Pa., in July, 1788, made a tour through New Jersey and Long Island, for the purpose of gathering information respecting the fly, and the best modes of withstanding its attack. Their account is published in the Pennsylvania Packet of August 21st, and is mainly occupied with a description of the Underhill wheat, and a full confirmation of previous reports respecting it.

On the east part of Long Island, where, as already noticed, the fly arrived in 1786, it so rapidly multiplied, that the following year many fields were nearly destroyed, and this year, the third of its presence, the wheat crop "was cut off almost universally." The red-bald, which was the common winter variety there raised, and the spring wheat, were equally affected. Rye in many fields was much injured, and a field of summer barley was wholly destroyed. (*Havens*, p. 73.)

Wheat in large quantities, was at this period exported hence to Great Britain. Accounts of the appalling havoc that this insect is making, excited the attention of the government there, and aroused their fears, lest so dreadful a scourge should be introduced into that country, by means of the American grain. "The Privy Council sat day after day, (says *Kirby and Spence*, vol. i., p. 50,) anxiously debating what measures should be adopted to ward off the danger of a calamity more to be dreaded, as they well knew, than the plague or pestilence; expresses were sent off in all directions to the officers of the customs at the outports, respecting the examination of cargoes; despatches written to the ambassadors in France, Austria, Prussia, and America, to gain that information, of the want of which they were now so sensible; and so important was the business deemed, that the minutes of the council, and the documents collated from, fill upwards of 200 octavo pages." In consequence of the information laid before them, a proclamation was issued by his Britannic majesty, on the 25th of June, 1788, prohibiting the entry of wheat, the growth of any of the territories of the United States, into any of the ports of Great Britain. It is very singular, that although the *entry* of American wheat was thus interdicted, it was still allowed to be *stored* at the different seaports, thus affording the obnoxious insects, if any of them had been contained in the grain, a very convenient opportunity to escape and make their way into the country!

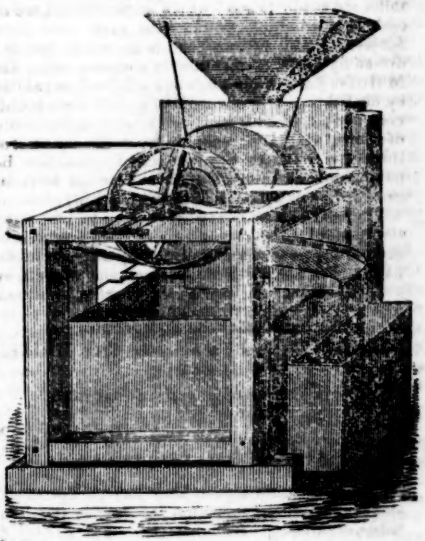
When the news of the closing of the British ports against American wheat reached this country, the measure was at once regarded as having resulted from misinformation respecting the habits of this insect. The supreme executive council of Pennsylvania immediately addressed a letter to the Philadelphia Society for Promoting Agriculture, requesting the society to investigate and report to the council the nature of the Hessian fly, and particularly whether the quality of the grain is affected by it. The society promptly replied, "that from every communication made to them on that subject, they are decidedly of opinion that it is the plant of the wheat alone, that is injured by this destructive insect, that what grain happens to be produced from such plants, is sound and good, and that this insect is not propagated by sowing wheat which grew on fields infected with it." They also refer to the letters of Col. Morgan, and of Messrs. Vaux and Jacobs, as containing the best information extant, relative to the natural history of the insect, and the most successful method of preventing its depredations. (*Carey's Museum*, vol. iv., p. 244.)

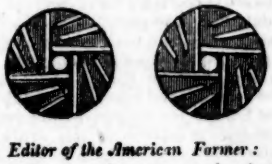
Dr. Currie took an active part in showing the government and people of England, that the information which had led to the closing of the ports against the entry of American grain, was wholly erroneous; and in eight or ten months the government bought the stored wheat at prime cost, kiln-dried it, and resold it at great loss. The prohibition was taken off almost immediately thereafter. (*Memoir of Currie*, ii., 65.)

(*To be Continued.*)

REMINGTON & MAYNARD'S CORN MILL.

PATENTED OCTOBER 1846.





To the Editor of the American Farmer:

Many plans have been proposed and mills made for grinding corn, &c. by horse power, for plantation use, and most of them condemned by the planter, either on account of the high price charged, imperfect and complicated construction, or great power required to drive them. These objections we have endeavored to overcome, both for our own, and for the benefit of our southern customers, most of whom are desirous to introduce a good Mill on their plantations, and who have endeavored to aid us by their plans and

advice. Among those gentlemen, we may name Mr. Remington, of Alabama, whose reputation as a successful planter, is not surpassed by his inventive genius; to him we are indebted for the Alabama Corn Mill, which has recently undergone considerable improvement by himself, aided by Mr. Maynard, of our firm. The construction and plan of this Mill, overcomes the objections made against domestic mills, and will no doubt prove a valuable addition to agricultural machinery, now in successful use. The principal novelty of this Mill is, the simple manner of adjusting the stones to cause a regular and equal bearing, the inclined feeding spout through the stationary stone and the peculiar mode of cutting the stones, which instead of the common mode, are cut, as represented by the figure, which, when brought in contact, act on the shear principle, causing the grinding to be rapid and more effectual than can be done by stones of small diameter, cut in the ordinary manner, at the same time reducing the draft to the power of two horses. The stones, (French Burr,) and band pulley, (as will be seen by the figure) run vertically instead of horizontally, (as most domestic mills are made to run) which improvement reduces cost, is more simple, works with more ease to the horses, is easily adjusted, and more convenient to be driven by horse powers now in common use. Each Mill has a Bolting Screen or box attached, as exhibited by the figure. We have ground 2½ to 3 bushels of fine corn and buckwheat meal per hour, and four bushels of Corn, Rye, &c., suitable for cattle in the same time; this estimate may be relied upon, the Mills having undergone several fair and actual tests, both asregard quantity of meal ground, quality, &c.

The only repairs necessary will be to take out the stones and face or "pick" them once a year, which may be done and the stones reset by any careful farm hand. Price $60.—Manufactured and for sale by

R. SINCLAIR, JR. & Co., 62 Light-st., Baltimore.

From the New York Herald.

THE TOBACCO TRADE OF THE UNITED STATES.

ITS IMPORTANCE AND RESTRICTIONS.

This is the second great exporting agricultural staple of this country, and several sections of the Union are deeply interested in its cultivation and consumption. Under all the restrictions which have been placed upon its admission into foreign countries, it stands only second to cotton, so far as the annual value of shipments are concerned. The English government, as well as most of the governments of Europe, have always derived a large revenue from the enormous duty they have placed upon tobacco, which is so excessive as to lead to extensive smuggling, as well as to the most injurious adulteration.

The government of the United States have, from time to time, sent special agents to the different governments of Europe, for the purpose of forming more favorable treaties in relation to this article; but as yet, no material progress has been made in removing these many restrictions imposed upon its admission into their limits. This article appears to have been selected from all others, for the purpose of providing revenue, and it is no doubt from the fact that it is entirely an article of luxury, that it has been from time immemorial subjected to these restrictions, which the cultivators of this country find particularly onerous.

Amidst all the progress to unlimited free trade, which Great Britain and some of the governments of the Continent have made within the past five years, not the most trifling concession has been made in favor of tobacco. Notwithstanding the failure of nearly all the attempts which have been made by our government, all hope of still succeeding has not been abandoned. Our representatives abroad have recently received instructions to draw the attention of the governments near which they reside to this question, and our new minister to Great Britain, Mr. Bancroft, has special instructions to that effect. In fact, this question will be the principal feature in his mission, and we cannot but pray that he may be more successful than any of his predecessors.

There is at present no political question at issue between the government of the United States and that of Great Britain, and it will, therefore, be the policy of both nations to remove all the restrictions upon the commerce of each, consistent with the peculiar character of their institutions. The recent alterations in the tariff of Great Britain have opened the ports of the United Kingdom to many of our agricultural products, upon very favorable terms, and the changes in the commercial system of the United States have opened markets for the manufacturers of England, which have heretofore been almost entirely closed. Mutual concessions have, therefore, been made, to an extent calculated to bind the two countries more closely together than they ever have been, but there is yet room for the removal of restrictions. In our trade with Great Britain, we have approached nearer free trade than she has. Upon an importation of one article from this country, valued at about three millions of dollars, she derives a greater revenue than we do from an importation of fifty millions of dollars of her manufactures and products. Where is the reciprocity in this case?

The immense income the treasury of Great Britain derives from the duty upon this article imported into that country, and the importance of continuing the high duty for the purpose of revenue, will place obstacles in the way of its removal, of the most difficult nature; and we have very great fears as to the success of Mr. Banfroft's efforts in relation to the matter. He will be aided by several eminent British statesmen, who are opposed to the almost prohibitory duty upon this article, and he will settle the question in some way, as speedily as possible.—It will be well to know what we are to expect, so that we can, in any changes which may be made in our commercial system, govern ourselves accordingly.

THE HORSE DISEASE.

We have seen many accounts of a very singular, and fatal distemper among the horses on Long Island, Staten Island, and some parts of New England. The following account of the disease is taken from the *New York Spirit of the Times.*

"Many of our readers will be surprised to learn that upon Long Island, within ten miles of the Union Course, not less than three hundred horses have died within three weeks! Dr. Curtis, of Brooklyn, has sent the following account of the disease to the "Eagle" of that city.

MR. EDITOR:—The public mind at the present time being much excited in consequence of the prevailing epidemic among horses, which has now raged for some weeks in the counties hereabout, and somewhat in New England—and, as I am informed, has destroyed over 500 animals—and there being an anxious desire very generally expressed to know as much as possible of its character, and probable cause, I am induced to send you the following few remarks, together with the result of a post mortem examina-

tion of the brain of the trotting horse John Anderson, who died day before yesterday morning from the effects of the prevailing disease.

I consider the disease now raging an epidemic caused from the decomposition of vegetable matter impairing the atmosphere, and making inroads on the constitution in the following manner: The miasma in the air being taken into the lungs, from its impurity prevents them effecting that change in the blood necessary to carrying on the vitality of the different parts—affecting more particularly the brain of the horses. I have been induced to come to this conclusion, from the symptoms accompanying the attack, and from the fact demonstrated from repeated post mortem examinations, of there being no inflammation of any of the internal organs; for in nearly every case I have examined I have found the contents of the chest and abdomen perfectly healthy. The disease makes its appearance in different forms; in some cases it commences by the horse refusing his food, and hanging down his head: after a short time he becomes stupid, and leans to the side of the stable for support, or if out at grass against a tree or fence.—After remaining there a few hours, he falls, and in the course of a day or two expires apparently exhausted. In others it commences by an apparent weakness across the loins, and stiffness of the limbs, which gradually increases until the poor animal falls in most cases never to rise again. In the latter case the brain is not visibly affected, and the horse will take both food and drink almost to the period of his decease.

In offering these few remarks, I do it with an earnest desire that they may meet the eye of some one more competent than myself to elucidate the matter; and may induce them to come forward, and throw same light upon this hitherto very fatal disease. The following were the appearances presented on the post mortem examination of the brain of the horse John Anderson. On opening the skull I found the Dura Mater highly injected, and the substance of the brain much softer than usual, and on removing it from its cavity, there was nearly a table spoonful of serum at its base; on exposing the medullary portions of the hemispheres, the vessels were full of red blood, there was also a small portion of highly coloured serum in the right ventricle; the whole brain together with the vessels leading to it were highly congested.

R. H. Curtis, Veterinary Surg'n, Tillary st.

August 29, 1846.

Another correspondent of the same paper writes as follows:

Mr. Editor:—I see, by the papers, that our neighbors in Queens county are still unsuccessful in arresting the disease which is killing their horses. "A number of new cases were reported yesterday," says one paper. "No remedy that can be depended upon has been discovered," says another. The following which I have gathered from such books as I have had access to, may not be without its use in suggesting to the experienced the cause of this fatal disorder. This peculiar complaint (says Coleman) which is even yet but little understood, appears dependent on a "particular state of stomach, acting on particular food." White appears to consider it as originating in "a peculiar state of the stomach." Blane characterizes it as "a specific inflammation of the stomach." It appears among horses of every description, and at grass as well as in a stable; and there is reason to think it epidemic, as it is prevalent in some seasons more than others. It may, perhaps, be regarded now and then as epidemic also; under which circumstances it appears confined to low wet situations, where long marsh grass is abundant, and where noxious aquatic plants mix themselves with the grasses. When it occurs at grass, the horse is found stupidly dull or asleep with his head resting against something. This has occasioned the disease to be called the sleepy staggers; and it has often been confounded with phrenitis, or inflammation of the brain. In the stable the horse doses, and rests his head in the manger: he then wakes up and falls to eating, which he continues to do until the distention of the stomach becomes enormous: for the peculiarity of the complaint consists in the total stop that is put to digestion, and the uneasy feel of the distention consequent to such indigestion appears to deceive the horse, and by a morbid excitement to force him to take in more. In this way he continues eating until the distentions prevent the return of the blood from the head, and the animal dies apoplectic, or his stomach bursts with over distention. More frequently, however, the stomach becomes flabby, inert, and paralytic, and after death presents marks of inflammation towards the pylorus.

Recovery is very doubtful. When it has taken place, it has occurred only when the disease has been mild, and has been assisted by stimulating the stomach into action by purgatives at once active and invigorating, as an ounce of aloes dissolved in a pint of gin. Croton oil might be to the amount of 20 or 25 drops in two ounces of tincture of aloes. Warm water in small quantities or mixed with common salt, should be frequently passed down. Remove every eatable: rake, clyster, and handrub; and avoid bleeding.

A similar epidemic prevailed on the same ground in the fall of 1828, which was equally fatal; many farmers losing 20 and 30 animals. The first symptoms of disease then, were a sort of stupidity and stiffness, which increased till death came, which was usually in from 3 to 12 hours. Often, the animal would be seen standing in the pasture as if at rest, when on endeavoring to remove him, he would fall prostrate, never to rise.

In that season those who bled seasonably, that is, before the attack, saved their horses; but if the bleeding was delayed till the development of the disease, it hastened death. The most successful medicine given after the attack, was a large dose of camphor. The season was a very sickly one; bilious and intermittent fevers of all grades being universally prevalent, and the same cause undoubtedly produced it among men and horses. It was without doubt the result of miasmatic influence.

TREATMENT OF COLTS.

Mr. Youatt, in his treatise on the Horse, gives some excellent directions for the treatment of young horses during the process of their education. He maintains that colts are seldom or never vicious, by nature, to any such degree that they may not be entirely subdued and rendered tractable by kindness, and, in the subsequent parts of the process of breaking, firmness. The greater number of horses which have become unfit for use by reason of their unmanageableness either in the harness or saddle, have been made so by injudicious treatment.

Young horses are often very perverse, but their perverseness will be generally overcome by persevering kindness. It may be necessary to use correction; but it should be always deferred till the earlier pro-

cesses of education are completed, so that the animal may understand clearly what it is required to do.

The breaking of a colt should commence from the time of weaning; for if delayed any considerable time his strength and obstinacy will be far more difficult to overcome. The usual mode of accustoming the animal to the halter, the bit and the saddle, are well enough understood.

"The colt may now be taken in the street to be gradually accustomed to the objects among which his services will be required. Here, from fear or playfulness, a considerable degree of starting and shying may be exhibited. As little notice as possible should be taken of it. The same or a similar object should be passed again, but at a greater distance. If the colt still shies, let the distance be farther increased, until he takes no notice of the object.—Then he may be gradually brought nearer to it, and this will be usually effected without the slighest difficulty; whereas, had there been an attempt to force him close to it in the first instance, the remembrance of the contest would have been associated with every appearance of the object, and the habit of shying would have been established."—*Prairie Farmer.*

From Lardner's Popular Lectures on Science and Art.

LUNAR INFLUENCES.

On a former occasion, I examined the question respecting the supposed influence of the moon upon the weather, and demonstrated that so far as actual observation has hitherto afforded grounds for reasoning, there is no discoverable correspondence between the lunar changes and the vicissitudes of rain and drought which can justify or in any degree countenance the popular belief, so generally entertained, as to dependance of change of weather upon the changes of the moon.

But meteorological phenomena are not the only effects imputed to our satellite; that body, like comets, is made responsible for a vast variety of interferences with organized nature. The circulation of the juices of vegetables, the qualities of grain, the fate of the vintage, are all laid to its account; and timber must be felled, the harvest cut down and gathered in, and the juice of the grape expressed, at times and under circumstances regulated by the aspects of the moon, if excellence be hoped for in these products of the soil.

According to the popular belief, our satellite also presides over human maladies; and the phenomena of the sick chamber are governed by the lunar phases; nay, the very marrow of our bones, and the weight of our bodies, suffer increase or diminution by its influence. Nor is its imputed power confined to physical or organic effects; it notoriously governs mental derangement

If these opinions respecting lunar influence were limited to particular countries, they would be less entitled to serious consideration; but it is a curious fact that many of them prevail and have prevailed in quarters of the earth, so distant and unconnected, that it is difficult to imagine the same error to have proceeded from the same source. At all events, the extent of their prevalence alone renders them a fit subject for serious investigation; and I propose at present to lay before you some of the principal facts and arguments bearing on these points, for the collection of which we are mainly indebted to the industry and research of M. Arago.

A large volume would be necessary to analyze all the popular opinions which refer to the supposed lunar influences. We shall confine ourselves, therefore, to the principal of them, and shortly examine how far they can be reconciled with the established principles of astronomy and physics.

The Red Moon.—It is believed generally, especially in the neighborhood of Paris, that in certain months of the year, the moon exerts a great influence upon the phenomena of vegetation. Gardeners give the name of *Red Moon* to that which is full between the middle of April and the close of May. According to them, the light of the moon, at that season, exercises an injurious influence upon the young shoots of plants. They say that when the sky is clear, the leaves and buds exposed to the lunar light redden and are killed as if by frost, at a time when the thermometer, exposed to the atmosphere, stands at many degrees above the freezing point. They say, also, that if a clouded sky intercepts the moon's light, it prevents these injurious consequences to the plants, although the circumstances of temperature are the same in both cases.

Any person who is acquainted with the beautiful theory of dew, which we owe to Dr. Wells, will find no difficulty in accounting for these effects erroneously imputed to the moon. If the heavens be clear and unclouded, all substances on the surface of the earth, which are strong and powerful radiators of heat, lose temperature by radiation, while the unclouded sky returns no heat to them to restore what they have lost. Such bodies, therefore, under these circumstances, become colder than the surrounding air, and may even, if they be liquid, be frozen. Ice, in fact, is produced, in warm climates, by similar means. But if the firmament be enveloped in clouds, the clouds having the quality of radiating heat, will restore by their radiation; the temperature, therefore, of such bodies will be maintained at a point equal to that of the air surrounding them.

Now the leaves and flowers of plants are strong and powerful radiators of heat. When the sky is clear, they therefore lose temperature, and may be frozen. If, on the other hand, the sky be clouded, their temperature is maintained for the reasons above stated.

The moon, therefore, has no connection whatever with this effect; and it is certain that plants would suffer, under the same circumstances, whether the moon is above or below the horizon. It equally is quite true that, if the moon be above the horizon, the plants cannot suffer unless it be visible, because a *clear sky* is indispensible, as much to the production of the injury to the plants as to the visibility of the moon; and, on the other hand, the same clouds which veil the moon and intercept her light, give back to the plants that warmth which prevents the injury here adverted to. The popular opinion is therefore right as to the *effect*, but wrong as to the *cause;* and its error will be at once discovered by showing that, on a clear night, when the moon is new, and, therefore, not visible, the plants may nevertheless suffer.

Time for felling Timber.—There is an opinion generally entertained that timber should be felled only during the decline of the moon; for if it be cut down during its increase, it will not be of a good or durable quality. This impression prevails in various countries. It is acted upon in England, and is made the ground of legislation in France. The forest laws of the latter country interdict the cutting of timber during the increase of the moon. M. Auguste de Saint Hilaire states, that he found the same

opinion prevalent in Brazil. Signor Francisco Pinto, an eminent agriculturist in the province of Espirito Santo, assured him as the result of his experience, that the wood which was not felled at the full of the moon was immediately attacked by worms and very soon rotted.

In the extensive forests of Germany, the same opinion is entertained and acted upon with the most undoubting confidence in its truth. Sauer, a superintendent of some of these districts, assigns what he believes to be its physical cause. According to him, the increase of the moon causes the sap to ascend in the timber, and, on the other hand, the decrease of the moon causes its descent. If the timber, therefore, be cut during the decrease of the moon, it will be cut in a dry state, the sap having retired, and the wood, therefore, will be compact, solid, and durable; but if it be cut during the increase of the moon, it will be felled with the sap in it, and will therefore be more spongy, more easily attacked by worms, more difficult to season, and more readily split and warped by changes of temperature.

Admitting for a moment the reality of this supposition concerning the motion of the sap, it would follow that the proper time for felling the timber would be the new moon, that being the epoch at which the descent of the sap would have been made, and the ascent not yet commenced. But can there be imagined, in the whole range of natural science, a physical relation more extraordinary and unaccountable than this supposed correspondence between the movement of the sap and the phases of the moon? Assuredly theory affords not the slightest countenance to such a supposition. But let us inquire as to the fact whether it be really the case that the quality of timber depends upon the state of the moon at the time it is felled.

M. Duhamel du Monceau, a celebrated French agriculturist, has made direct and positive experiments, for the purpose of testing this question, and has clearly and conclusively shown that the qualities of timber felled in different parts of the lunar month are the same. M. Duhamel felled a great many trees of the same age, growing from the same soil, and exposed to the same aspect, and never found any difference in the quality of the timber when he compared those which were felled in the decline of the moon with those which were felled during its increase; in general they have afforded timber of the same quality. He adds, however, that by a circumstance, which was doubtless fortuitous, a slight difference was manifested in favor of timber which had been felled between the new and full moon—contrary to popular opinion.

Supposed Lunar Influence on Vegetables.—It is an aphorism, received by all gardeners and agriculturists in Europe, that vegetables, plants, and trees, which are expected to flourish and grow with vigor, should be planted, grafted, and pruned, during the increase of the moon. This opinion is altogether erroneous. The increase or decrease of the moon has no appreciable influence on the phenomena of vegetation; and the experiments and observations of several French agriculturists, and especially of M. Duhamel du Monceau, (already alluded to,) have clearly established this.

Montanari has attempted, like M. Sauer, to assign the physical cause for this imaginary effect. During the day, he says, the solar heat augments the quantity of sap which circulates in plants, by increasing the magnitude of the tube through which the sap moves, while the cold of the night produces the opposite effect, by contracting these tubes. Now, at the moment of sunset, if the moon be increasing, it will be above the horizon, and the warmth of its light would prolong the circulation of the sap; but, during its decline, it will not rise for a considerable time after sunset, and the plants will be suddenly exposed to the unmitigated cold of the night, by which a sudden contraction of leaves and tubes will be produced, and the circulation of the sap as suddenly obstructed.

If we admit the lunar rays to possess any sensible calorific power, this reasoning might be allowed; but it will have very little force when it is considered that the extreme change of temparature which can be produced by the lunar light, does not amount to the thousandth part of a degree of the thermometer.

It is a curious circumstance that this erroneous prejudice prevails on the American continent. M. Auguste de Saint Hiliare states that, in Brazil, cultivators plant during the decline of the moon all vegetables whose roots are used as food, and, on the contrary, they plant during the increasing moon the sugar-cane, maize, rice, beans, &c., and those which bear the food upon their stocks and branches. Experiments, however, were made and reported by M. de Chauvalon, at Martinique, on vegetables of both kinds, planted at different times in the lunar month, and no appreciable difference in their qualities was discovered.

There are some traces of a principle in the rule adopted by the South American agronomes, according to which they treat the two classes of plants, distinguished by the production of fruit on their roots or on their branches, differently; but there are none in the European aphorisms. The directions of Pliny are still more specific: he prescribes the time of the full moon for sowing beans, and that of the new moon for lentils. 'Truly,' says M. Arago, 'we have need of a robust faith to admit, without proof, that the moon, at the distance of 240,000 miles, shall, in one position, act advantageously upon the vegetation of beans, and that in the opposite position, and at the same distance, she shall be propitious to lentils.

Supposed Lunar Influence on Grain.—Pliny states, that if we would collect grain for the purpose of immediate sale, we should do so at the full of the moon, because, during the moon's increase, the grain augments remarkably in magnitude; but if we would collect the grain to preserve it, we should choose the new moon, or the decline of the moon.

So far as it is consistent with observation that more rain fall during the increase of the moon than during its decline, there may be some reason for this maxim; but Pliny, or those from whom we receive the maxim, can barely have credit for grounds so rational: besides which, the difference in the quantity of rain which falls during the two periods is too insignificant to produce the effects here adverted to.

Supposed Lunar Influence on Wine-making.—It is a maxim of wine-growers, that wine which has been made in two moons is never of a good quality, and cannot be clear. Toaldo, the celebrated Italian meteorologist, whose mind appears to have been predisposed for the reception of lunar prejudice, attempts to justify this maxim. 'The vinous fermentation,' he says, 'can only be carried on in two moons when it begins immediately before the new moon; and, consequently, that this being a time when the enlightened side of the moon is turned for the most part from the earth, our atmosphere is deprived of the heat of the lunar rays, that, therefore, the temperature of the air is lowered, and the fermentation is less active.'

To this we need only answer, that the moon's rays do not affect the temperature of the air to the extent of one thousandth part of a degree of the thetmometer, and that the difference of temperatures of any two neighboring places, in which the process of making the wine of the same soil and vintage might be conducted, must be a thousand times greater at any given moment of time, and yet no one ever imagines that such a circumstance can affect the quality of the wine.

It is a maxim of Italian wine merchants, that wine ought never to be transferred from one vessel to another in the month of January or March, unless in the decline of the moon, under penalty of seeing it spoiled.

Toaldo has not favored us with any physical reason for this maxim; but it is remarkable that Pliny, on the authority of Hyginus, recommends precisely the opposite course. We may presume that, from such contrary rules, it may reasonably be inferred that the moon has no influence in this case.

Among the maxims of Pliny we find that grapes should be dried by night at new moon, and by day at full moon.

When the moon is new it is below the horizon during the night, and above it during the day, and when it is full it is above the horizon during the night, and below it during the day. The maxim of Pliny, therefore, is equivalent to a condition requiring that the grapes should be dried when the moon is below the horizon. It is evident that the absence of the moon is not required in this case, in consequence of any effect which her light might produce if she were present; for when the moon is new she affords no light, even when in the firmament, the illuminated side being turned from the earth. If the maxim be founded upon any reason, it must, therefore, either be on some influence which the moon is supposed to produce when present, independent of her light (the absence of which influence is desired,) or it may be that she may be supposed to transmit some effect through the solid mass of the earth, when on the other side of it, which she is incapable of producing without its intervention. The maxim is probably as absurd and groundless as the other effects imputed to the moon.

* * * * * * * *

Supposed Lunar Influence on Putrefaction.—Pliny and Plutarch have transmitted it as a maxim, that the light of the moon facilitates the putrefaction of animal substances, and covers them with moisture. The same opinion prevails in the West Indies and in South America. An impression is prevalent, also, that certain kinds of fruit exposed to moonlight lose their flavor and become soft and flabby; and that if a wounded mule be exposed to the light of the moon during the night, the wound will become irritated, and frequently become incurable.

Such effects, if real, may be explained upon the same principles as those by which we have already explained the effects imputed to the red moon. Animal substances exposed to a clear sky at night, are liable to receive a deposition of dew, which humidity has a tendency to accelerate putrefaction. But this effect will be produced if the sky be clear, whether the moon be above the horizon or not. The moon, therefore, in this case, is a witness and not an agent; and we must acquit her of the misdeeds imputed to her.

The following mixture will kill slugs; gas water, 1 gallon; water, 6 gallons; lime as much as it will take up.

☞We refer the reader to our advertisement of new books.

CONSTITUENTS OF PLANTS.

In a communication upon the duties of agricultural societies, Dr. N. S. Davis of Binghamton, N. Y. takes occasion to remark upon the different results reached by chemists in their analysis of plants. As a sample, take the following:

"Horeford states 100 parts of the ash of red clover to contain, of potash, 12.16: soda, 30.75: lime, 16 52.

Johnson states it to contain, of potash, 24.80: soda, 4 20: lime, 2.41.

And still another author gives it as follows: potash, 16.40: soda, 4.00: lime 22.40.

Again, compare the following statements of the quantity of ash left after burning a given quantity of the different species of grains. The first column is quoted from the 53d page of the first volume of American Quarterly Journal of Agriculture and Science; the second from Boussingault:

Ash in 100 *lbs. of*		*Ash in* 100 *lbs. of*	
Wheat,	1.18	Wheat,	2.40
Wheat straw,	3.51	Wheat straw,	7.00
Rye,	1.04	Rye,	2.30
Rye straw,	2.79	Rye straw,	3.60
Oats,	2.58	Oats,	4.00
Oat straw,	5 74	Oat straw,	5.10

Weignan and Pallstorff give 2.86 as the quantity of ash in oats.

Here are three writers who make the amount of potash contained in the ash of red clover vary from 12 to 24 per cent: the amount of soda from 4 to 30 per cent; while the amount of ash derived from a given quantity of grain or grass is equally various, as seen in the table."

It is obvious that such analyses, unexplained, can be of no sort of use to the cultivator; and indeed from this very cause we have long ago lost all confidence in the result of such operations, when the whole sphere of their investigation has been confined to the laboratory. Dr. D. pertinently observes:

"But whence come these wide discrepancies in the results of different investigators? Do they arise from imperfections in the modes of analyses, or from actual variations in the composition of the same species of plant when grown on different soils? or is it owing to the analysis being made at different periods of the growth of the plant?—Doubtless all these causes have aided in producing the result alluded to.—But the perfection to which chemical analysis is now carried should prevent the first from exerting any influence in future. That the composition of the same plant will vary to some extent, according to the composition of the soil on which it is grown, or that one alkali may be made to replace another in the living plant, within certain limits, is very probable. But how far this variation may be carried, and yet the plant be brought to full perfection, is a highly interesting question for investigation."

The above extract points to the remedy for these discrepancies. That the analysis of a plant should be of use, the nature of the soil on which it was grown must be understood, together with its own age and condition.

The author well remarks that isolated facts in science are of little use in their application to agriculture unless their relation to other facts is taken into account. This accords with the analogy of things and is an important truth.

Draining low lands will contribute to promote health and profit.

For the American Farmer.

THE POTATO CROP.

By R. Sinclair, Jr.

Success in raising the Potato in this country, is important, the more so now, that the failure has become so general in Europe.

The following remarks if acted upon, will prevent the disease, and insure a large and profitable crop. Select a good clay soil (land previously limed always preferred) plow and harrow the ground thoroughly, which may be done most effectually, by using in addition to the common, the subsoil plow, which not only assists in pulverizing, but also in a great measure secures the crop against loss from very wet or dry seasons, when the potatoes are cut into pieces of suitable size for planting, having on each piece a good germ, sift plaster over them, and stir the pile with a shovel until the raw parts of the potato become coated, which prevents bleeding, at same time invigorates and strengthens the plant. Plant in drills as usual, previous to covering however, strew leached ashes mixed with a small quantity of *Lime*, over the planting at the rate of a shovelful to each yard, (more or less according to the strength of the soil,) when the vines are about ten inches out of ground, spread over the hills and vines a mixture of ashes and plaster, (or ashes and lime,) a man with a bag over his shoulder containing this mixture; throwing it right and left, will soon perform this task. If the weather becomes wet, sultry, or otherwise unfavorable to the crop, it will be well to sow lightly over the vines powder of sulphur, an article certain of effects against mildew, and other similar diseases of plants; it is also a powerful stimulant to vegetation.

Planters on our bay shores who cannot easily procure ashes, may use instead, salt rich muck, which they have in abundance, also sea weed, &c. This muck, by the way, should be taken up and placed on high ground during the winter, when it will undergo the first preparation, or become dry; early in the ensuing spring, form it into compost piles, adding to each layer of about 8 inches thick, a coat of quick lime or unleached ashes. As the pile progresses, it should be saturated with water, which will cause the lime or ashes to act, and more completely incorporate the whole into an active and effectual manure—let the pile stand until planting time arrives, when it may be cut down, mixed and carted to the field, and strewn on the potato planting, instead of ashes as above directed; it is also a good and safe plan to plant corn and potatoes in alternate rows, (running north and south) leaving full room for circulaiion of air, cultivation, &c. This mode is particularly recommended for southern crops and sandy soil, also beneficial in securing the potatoes from driving rains and external heat. In short, reject those hot acideous rich manures, and use instead old composts under the head of *alkalies*.

The followiug compost pile can be made without much expense, particularly by farmers living near great cities, viz: first, a layer of rich earth from river or ditch banks, the woods, fence corners, wood piles, &c., adding on top of each layer, a mixture of ashes, lime, lime and sand from old buildings, waste from kitchens, chamber lie, drainings from stables, soapsuds, spoiled fish and brine, charcoal, soot, &c.; most of the articles can be obtained from the farmer's own dwelling and premises, and all in abundance with trifling cost from any city or town. This is a compound of ingredients, particularly adapted to the potato crop, and much more economical than manuring with lime or ashes alone, not composted. There is no particnlar time to commence this pile; every day produces something either from the house or stables, which cannot be preserved without incorporating it with earth, or something to prevent evaporation. The month of August, and the fall months, are however, the best time to procure materials, and to form the manure pile.

R. S.

From the Ohio Cultivator.

Maclura or Osage Orange for Hedges.

(Letter from Mr. Gowen.)

Mr. Bateham.—Observing in a late number of your spirited and useful paper, a reference to me, as to the running and sprouting of the roots of the Maclura, I take occasion to respond to the call—ever ready as I am, and ever will be I trust, to enlighten my brother agriculturists as far as my experience goes, upon any subject connected with their interests and the promotion of agricultural improvement.

From an intuitive repugnance at first, to the unsightly post and rail, and worm fences, and the experimenting upon the expense and trouble in maintaining them, I turned my attention to live fencing, as being more sightly, less expensive, and more enduring. The hawthorn—the beautiful and fragrant hawthorn, from a thousand associations, would have been the substitute for the pound-like post and bars; but then the objection presented itself, of its being too delicate for our intense frosts and fervid suns. Looking with much interest at all other sorts of hedge in use, I adopted the Osage Orange, and have planted freely of them for several years. Its foliage is beautiful, its growth rapid, it spines or thorns formidable, and it stands the climate well. If all the hedges of this plant I have put down were joined together continuously, they would extend over a mile in length. The plants I procured myself since 1838, from cuttings from the roots, made and planted in manner as the Morus Multicaulis was, by those who followed that speculation.

The only objection to be taken to the Osage Orange is the one in question; it does run considerably, and sprouts from the roots, but this is as nothing on farm land, compared to the constant repairing of post and rail fence, the loss of grouud by the worm fence, and the weeds and brambles occupying the angles inside the fields—but the farmer who will have a worm fence of cultivated land, and permit a nursery of thistles and other pests to luxuriate in patches in every field, will never think of a live fence. The beautiful and shady hedge can have no charms for him, nor will he put himself to the trouble to count the difference in cost of a row of beautiful and compact dwarfed trees, planted to grow and abide forever, and that of post and rails, to be renewed every ten years, and requiring patching and setting up almost every spring.

I might give you the history of the Mbclura, or Osage Orange, but I suppose it is familiar to most of your readers. It was called Maclura in compliment to the late William Maclure, a Scotch gentleman, a Philosopher of much learning and science, and a Philanthropist after the Robt. Owen and Fanny Wright school.

I should have replied to your call in this matter earlier, but indisposition, and other matters and cares prevented; and even now, though much better in health, I am obliged to be very brief. Before I close however, permit me to thank you for the interest you have manifested for the founding of an Agri-

cultural College under my auspices, and for the favorable terms in which you have spoken of me connected with that subject. I feel that I deserve the commendation of you and your brethren of the agricultural press. I shall not be accused of vanity or egotism, by those who know me well, when I say, there are few men living, who have labored harder or with more singleness of purpose to promote the true and permanent interests of agriculture than I have done. I *was in earnest, and still am.* If Providence restores to me my wonted health and energies, I shall do that for the Landed Interest, through the college you have so favorably spoken of, that will more than realize your expectations, sanguine as they seem to be, and will be sensibly seen and felt long after we shall have passed that bourne, from whence no traveller returns.

Very Respectfully, Yours, &c.
JAMES GOWEN.

Mt. Airy, Philadelphia, Oct. 1846.

FLORICULTURAL.

DECEMBER WORK—FLOWERS.

Prepared for the Farmer, by Samuel Feast, Florist.

Green-house Plants—Attend to the giving of these plenty of air during fine weather.

Camelia buds will now be advancing rapidly. Water copiously at the roots, and syringe occasionally over the tops. Sow the seeds at once.

Azaleas will not need much water this month unless kept in a very warm temperature.

Cactuses with the exception of *Truncatum*, should have very little water, and be kept in a cool and dry part of the house.

Tulips, Hyacinths, Anemones and other spring flowering bulbs, should be planted, before the ground is too hard frozen.

Tender Roses, in the open ground should have a slight protection for the winter.

Carnations, &c. in frames, should have plenty of air in warm weather and very little water.

Verbenas will need very little water.

Schizanthuses & Chinese Primroses, should be potted.

Geraniums will need very little water this month—Fumigate with tobacco upon the first appearance of the *Green fly.*

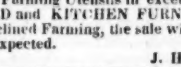
BALTIMORE MARKET—NOV. 30.

Coupons 76a77, dull; Coffee, Rio & Laguayra 7 1-2a7 3-4; Potatoes, Eastern common 60a65, Mercer 70a75; Feathers 25a28c; Mackerel, No. 1, $9; 2, $6, 3, $4.75; Cloverseed 4.37a4.50; flaxseed 1.25; Molasses, P. Ric. 25a27; N.O. sugar house 37a38; Oil fall sperm, 95, winter 105a110; Pork, little doing, Mess, $10, nominal, and prime $9; Beef, demand limited, prices nominal; mess 10 75a11, No. 1. 9a9 25, prime 7a7 25; Bacon, shoulders 5 1-2a5 3-4, hams 7a7 1-2, choice lots 8c; Butter, glades 14a15, western 8a9; Cheese, West. Reserve 8, Eastern 9a12; Lard, a small lot sold at 8 1-2, not much new yet in market; Rice $4.37 per 100 lb; Sugar, N.O. and P.Rico $9; Wool, good inquiry and some few lots beginning to come in; Whiskey 22, in hhds. 23 in bbls. wagon price of bbls 19, excinsive of the bbls; Tobacco, little doing, the lateness of the season and the gloomy condition of the European markets have caused nearly a total suspension of transactions; the receipts are now light, and holders less disposed to sell at a sacrifice; some ground leaf is selling at 2a2 50 for common lots, and better sorts at $4a5, but very little of the latter is disposed of; we quote inter. and com. Md. 1.50a 2.50; midd. to good 3a5 50; good 6, and fine 7a12; Ohio com. 1. 50a3 50; good 4.50a6, fine red and wrappery 6.50a9, fine yellow 9a11, and extra wrappery 10a12; the inspections for the last four weeks are, Md. 2357, Ohio 1521, Ky. 33; total 4111 hds. Flour, Howard st. 4.87; wite but few sellers, holders anticipating an advance; City Mills is generally held at $5, and Susquehanna 4.87; Corn Meal 3.62a3.75; Wheat, supply large and sales at 90 a98 for good to prime reds, and 80a90 for inferior to fair reds; white wheat 105 to 116; large sales of Pa. have been made during the last week for shipment, and sold as high as 102 for red, and 105 for white; Corn on Monday last sold at 53a55, but on Wednesday fell to 50, and so continued to the close of the week for new white and yellow; Rye 65c; Oats 28a30; Cattle, beeves $2a3, average rate about $2.40; 1120 offered, and all sold except 69 head; live Hogs $4.37a4.63, sales mostly at 4.50, which is an improvement.

PUBLIC SALE.—On TUESDAY, 15th Dec. inst. at 10 o'clock A. M. precisely, will be sold at the residence of the subscriber, in Howard District A. A. Co. Md, all the personal Property on the Farm, consisting of 15 head of Horses, 3 Colts, one thorough bred Filly, 3 years old last March; about 30 head of Cattle, some of them very superior milkers, and most of them part blooded; about 80 head of stock and fatted Hogs; 3 broad tread Wagons, 2 Ox Carts, and 2 horse Carts. Also, Oats, Corn, Potatoes, Provender of every description—and a general variety of Farming Utensils in excellent order, and all his HOUSEHOLD and KITCHEN FURNITURE. As the subscriber has declined Farming, the sale will be positive, and bargains may be expected.

Dec. 1 J. H. IGLEHART.

"Spade labour, the perfection of good husbandry."

PULVERIZATION.  DECOMPOSITION.

THE "PREMIUM PLOUGH"—In PROUTY & MEARS' No. 5 1-2, "confessedly the best PLOUGH known in this country for beauty of work and pulverizing the soil," we have combined the most perfect swing as well as wheel Plough, connected also with the principles of self-sharpening and centre-draught, which with the facility of turning it into a Tandem 2, 4, or 3 horses abreast Plough in a minute of time, renders it the NE PLUS ULTRA of perfection. During the past season it received the first premium for the BEST PLOUGH, at Philadelphia; a first, second and third premium at New Castle county, Del.; the Imperial Medal of Russia, of massive gold, value $300; and at Prince George's society, Md. the highest testimony of approbation, in not permitting it to compete, having already received the first premium as "the *BEST PLOUGH* for general purposes." Their one-horse Plough No. 2 1-2, is strongly recommended for light soils and horticultural purposes, being built after the same model, self sharpening, and carrying a sod furrow 10 in wide with great ease and precision.

In addition to the above, the Premium list of the Prouty & Mears' Centre Draught Plough for the present season, is as follows, viz:

New Castle Co. Del., 6 premiums out of 8, including the first two premiums.
Concord, Mass., 5 premiums out of 8, furrows 10 in. deep.
Philadelphia, 1st premium for the best plough, of the trial.
Taunton, Mass. 5 premiums, including the three first premiums.
Newtown, Bucks Co. Pa., "the best Plough for pulverizing the soil and burying the stubble."

For sale at No. 55 LIGHT ST. Baltimore, MR. EZRA WHITMAN being appointed sole Agent for sales in Baltimore and vicinity. dec 1

HIGHLY VALUABLE FARM AND TAVERN STAND FOR SALE in Baltimore County, known as Kingsville, 14 miles from Baltimore, on the Bel-air road, containing about 260 ACRES OF LAND; 200 acres clear; the balance in heavy timber, such as Hickory, Chestnut, and Oak. It has 2 good Apple Orchards, with an abundance of all kinds of fruit trees. The Farm is well laid off, with springs of water in each field. The buildings are all of the most substantial kind. The DWELLING is stone, 2 stories high, lately thoroughly repaired, size 90x25, with 2 story back building and 2 story porch in front; stone Barn 90x25 feet, with stabling under it. Also, Shed attached, 60x15, with Corn House, Tool House and 3 Spring Houses, Poultry House, &c. It has also on the premises 5 other Tenements under rent, which will pay half of the interest of the purchase money—one of them is a new 2 story Frame house, put up for and now occupied as a tavern and store at the forks of the Bel-air and Joppa road. The soil of the farm is of the best kind and now highly improved with lime, bone and guano, which has been liberally spread on it in the last two years; it is within two miles of lime quarries, which affords facilities of further improvement. 100 acres of the farm is newly set in Timothy and Clover, and will yield 1 1-2 to 2 tons per acre; it is in one of the most healthy and respectable neighborhoods in the county, with churches and schools very near it; also, several factories, which afford a market for all the products of the farm, at the highest prices. Persons wishing to purchase will apply to Geo. Pearce, on the Farm, or to S. SANDS,
dec 1 Office American Farmer.

BOMMER'S METHOD FOR MAKING MANURE—The subscriber has been appointed by Mr. Bommer, his agent for the Southern States, and will dispose of the Books, with the right to use them, for any sized farm, at $5 each. Address (post paid) m1 SAML. SANDS, office of "A. Farmer."

NOTICE

CLAIRMONT NURSERY,

Near Baltimore, Md.

We again take pleasure in notifying our various customers and the public, that the time has nearly arrived for transplanting Trees, &c., and consider our stock of fruit trees superior to what they have ever been before both in quality and in quantity, as we have had an opportuny of testing their correctness from our standard Trees which are extensively bearing.—We deem it unnecessary to enumerate the various kinds of fruit and ornamental Trees, Shrubbery, Roses, Green House plants, Flower roots, &c. &c., suffice it to say our Nursery and Seed Garden occupies about 100 acres of the Farm and our determination is to give satisfaction if possible, both in price and quality—printed Catalogues, giving our prices, will be be sent gratis; where large quantities are wanted considera ble discount will be made. Letters addressed to R. Sinclair, Jr. & Co., Light St., Baltimore, or the subscribers, Balto. Md will meet with prompt attention.

Persons wishing to act as Agents will please let us hear from them.

Oct 1 SINCLAIR & CORSE.

AGRICULTURAL IMPLEMENTS—LABOR SAVING MACHINERY.—*GEORGE PAGE*, Machinist & Manufacturer, Baltimore st. West of Schraeder st. Baltimore, is now prepared to supply Agriculturists and all others in want o Agricultural and Labor-saving MACHINERY, with any thing in his line. He can furnish Portable Saw Mills to go by steam, horse or water power; Lumber Wheels; Horse Powers of various sizes, ranging in price from $85 to $200, and each simple, strong and powerful. His *Horse Power & Thrashing Machine*, he is prepared to supply at the low price of $125 complete; the Thrashing Machines without the horse power, according to size, at $30, 40, 65 and $75; Improved Seed and Corn Planter, portable Tobacco Press; Portable Grist Mills complete, $125.

The "Simon pure," and invincible WILEY PLOW still in the field—A. G. MOTT, at No. 38 ENSOR STREET, near the *Bel-Air Market*—Manufacturer and Vender of Implements of Husbandry, viz. *Plows, Harrows, Cultivators, Grain-Cradles, Wheat-Fans, Corn Shellers, Straw-Cutters*, Endless chain *Horse Powers, Threshing Machines, &c. &c.*—through this medium, would apprize the agricultural community of the fact, that he is the only manufacturer in the "Monumental city" of the GENUINE WILEY PLOW (right and left hand) composed of the real "simon pure" and justly celebrated New York composition, chilled castings, the points of which, are warranted to stand the most rugged soil equal to steel, at a cost of about *two cents* per acre, for blacksmith's bill.—If you are for bargains, call, or send your orders, for he guarantees his implements good as the best, and cheap as the cheapest, *for cash*, and delivered in any part of the city free of enarge.

THE SUBSCRIBER takes pleasure in returning thanks to the many gentlemen who have favoured him with their MILL-WORK; also to the farmers and planters for their liberal support in the Machine line, and would respectfullyy inform them, that his endeavors to please will continue unremitting. He is prepared at all times to build any of the following kinds of MILLS. Overshot, Pitch Back, Breast, Undershot, Reacting, Steam, Wind, Tide, Horse-power, or Tread Mills; and having the best of workmen employed at pattern and machine making, he can at all times furnish the best articles at the lowest prices, such as Horsepowers, Pettigrew Shellers, Murray's Shellers, 4 kinds hand and power Shellers, portable Mills adapted to any power, Corn and Cob grinders, Straw, Hay and Fodder Cutters, Carry-log and Mill Screws; also manufactures Hoisting Machines, Hoisting Cranes, Pile Drivers, Turning Lathes and Steam Engines; and any kind o Machine, Model or Mill-work built to order. Any kind of Castings and Smith-work at the lowest prices. I warrant all Mills planned and erected by me to operate well. JAS. MURRAY,

Millwright, York near Light st. Baltimore.

Also for sale, Jas. Murray's patent separating Shellers, which shells and puts the corn in perfect order at the same time, for the mill or for shipping—Persons living near the city can bring with them one or two barrels of corn, and give the sheller a fair trial before purchasing.

He has also for sale, the following second hand Machinery: 2 pair 4 ft 6 in. French burr Mill-stones, with all the gearing; 2 pair 3 ft 6 in. French Burr Millstones, with all the gearing; and some Saw Mill work—the whole are good, and any or all of the above will be sold low. n 1

LIME—LIME.—The subscriber is prepared to furnish from his depot at the City Block, Baltimore, ALUM STONE LIME of the purest description, deliverable at any point on the Chesapeake Bay or its tributaries, at such prices as cannot fail to please.

He is also prepared to furnish superior building Lime at 25 c. per bushel, in hhds., or at $1 per bbl. E. J. COOPER.

July City Block, Baltimore.

PLOUGHS! PLOUGHS!!

The subscriber is manufacturing Ploughs of various patterns and of different sizes; also Wheat Fans, Cylindrical Straw Cutters, Corn and Tobacco Cultivators, CORN SHELLERS, &c. Also,

THRESHING MACHINES and HORSE POWERS—these latter are used by the following gentlemen, to whom reference is made, as to their superior value, viz. Messrs. S. Beard, T. Beard, Dr. Watkins, T. J. Hodges, T. Welsh, W. Mackall, J. Iglehart, A. Sellman, W. Hopkins, J. Kent, G. R. Gaither, all of Anne Arundel county; and to Messrs. R. B. Chew, J. Y. Barber, W. Boswell, G. W. Weems, and Z. Howes, of Calvert co. Md. ☞Those wishing to examine the above articles are invited to call at my establishment in *Gillingham alley*, entrance from Howard st. 4 doors from Pratt st. Baltimore.

1mh CHAS. B. DRURY.

AYRSHIRE BULL FOR SALE.—He is about 6 years old of the stock imported by Dr. Hollman, and is in excellent order—Price $100—Address B. C. HOWARD,

nov 1 Baltimore.

AGENCY FOR THE PURCHASE AND SALE OF IMPROVED BREEDS OF CATTLE AND SHEEP.—The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c, for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

Nov. 1 AARON CLEMENT.

TO FARMERS & GARDENERS—The subscriber has always on hand a fine assortment of GLASS for GREEN HOUSES, HOT-BEDS, &c. of all sizes and qualities, which will be sold at lowest market rates. W. A. WISONG,

nov 1 No. 2 N. Liberty st. Baltimore

EZRA WHITMAN'S WROUGHT IRON RAIL-WAY Horse Power and Thrashing Machine, of which more than one thousand are now in use—and as this is the only Horse Power or Thrashing Machine that has given general satisfaction, I take pleasure in giving a short description of it, with a list of prices.

1st. The frame of the Horse Power is made with five posts, on either side, and as many cross girths bolted together with *wrought* iron in the most substantial manner.

2d. The Rail-way, guides, circles, and all the connecting and fastening irons, are made of *wrought iron*, instead of cast iron.

3d. The gearing is at the end of the Power, where it is not affected by the wear, or liable to be broken by wild or false horses.

4th. It being made of wrought iron, there is no difficulty in giving sufficient width for the horses to travel with ease, and no more rods, wheels or fastenings in the *two horse* power, than in the one horse power.

☞Farmers wishing to purchase, will be particular to observe the above, as the great success of my machine, may bring others, of inferior construction, into our market.

I have the pleasure of referring to either of the following named gentlemen farmers, residing in the immediate vicinity of Baltimore, who have purchased my Horse Power and Thrashing Machine the past season, and who will no doubt be willing to give information respecting their utility,—viz:

Jesse Slingluff	James Swan	George Harryman
Jacob. Forney	William Gent	Daniel Bowly
Thomas J. Talbott	Owen Cecil	A. M. Johnson
Joseph Parks	George Jenkins	Charles R. Barney
Frederick Harrison	John Rider	Samuel Hutton

The cash prices for those articles are as follows, viz:

For Two Horse Power, $100—For One Horse Power, $75—with an additional charge for extra long shaft and extra pully, $5. For Thrasher which thrashes and cleans at one and the same operation, $100. For 24 inch Thrasher, with new improvement, $50—20 inch do. with do., $45—16 inch do., $40.

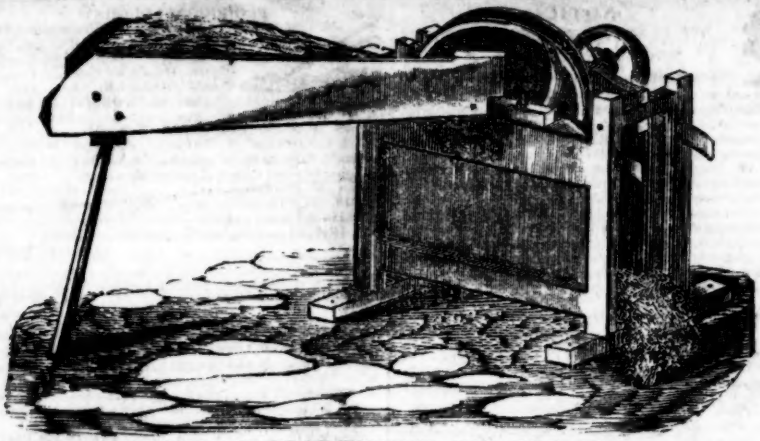
The prices or common Thrashers vary from 25 to $35.

EZRA WHITMAN, Jr.

April 1 No. 55 Light street near Pratt.

AGRICULTURAL IMPLEMENTS for sale at No. 7 Bowly's wharf, Baltimore, by WM. GAWTHROP & SON.

We offer to Farmers and Planters our Premium Double Corn Shellers, which have proved themselves to be the very best now in use—we have on hand one of the best selections of PLOWS in the state, the castings of which are the composition metal, with chilled heels, points and edges; our plows embrace the Major & Horton from 6 inch. to 12, so much used in the North; it is one of the lightest draught plows in use—we have the Wiley improved, and the old pattern of the N. York manufacture, which is known without comment. Also, the Prouty, Chenoweth, Self-sharpening, Davis, and all other kinds; Plow Shears and Points for all kinds of Plows; Fans, Straw Cutters, Corn and Cob Crushers, and all other kinds of Implements used in farming—we also keep all kinds of Field Seeds—we do a general commission business in Grain, Seeds and Country Produce. Fe



ROYER'S FODDER CUTTER AND GRINDER.

THIS is an implement very desirable for cutting straw and hay—also particularly adapted to cutting Corn Fodder. The advantages of cutting and grinding corn stalks for feed, has become of such importance that it must give the farmer great satisfaction to learn that Mr. Royer has succeeded in getting up an article for this purpose, which is very simple and durable, and will cut and grind at the rate of 200 to 300 bushels per hour; and from the satisfaction expressed by those now using the article, there can be no doubt that ere long it will become generally adopted. The price is $30; and for sale at the Warehouse of E. WHITMAN, Jr., 55 LIGHT-STREET, Baltimore. dec 1

Christmas and New Year Presents.

THE subscriber is adding to his stock of books, a variety of BEAUTIFULLY BOUND BOOKS, suitable for presents for the approaching holidays, consisting of BIBLES, Prayer Books, Illustrated works, Annuals, the Poets, Novels, Albums, &c. &c. He has also a general assortment of Agricultural works, School Books, fine and common Stationery, Paper, Pencils, Blank Books, Quills,—and a great variety of Novels, in paper covers, which can be sent by mail.

Subscriptions received for Agricultural and other Periodicals in any part of the U. S. He would particularly recommend to gardeners, florists, and others, "Hovey's Magazine of Horticulture," and "*Downing's Horticulturist*," each published at $3 per annum.

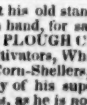
All orders promptly attended to, and the subscriber will be happy to receive the visits of his friends from the country, who may desire to obtain presents for their friends during the approaching festivities.

SAMMEL SANDS,
Bookseller, Stationer, & Printer.
Office of the American Farmer. 122 Baltimore street.

OLD AGRICULTURAL ESTABLISHMENT.

J. S. EASTMAN, at his old stand, now No. 180 PRATT STREET, has on hand, for sale, a large assortment of superior PLOUGHS and PLOUGH CASTINGS, at Wholesale & Retail. Harrows, Cultivators, Wheat Fans, Threshing Machines, Horse-Powers, Corn-Shellers, Corn & Cob Crushers, &c. &c. With a supply of his superior Patent Cylindrical Straw Cutters of all sizes, as he is now getting a supply of the 11 inch size of which he has for some time past been out of—also, for sale some twenty odd volumes of the American Farmer, which will be sold low, a great portion of them are bound. dec 1 tf

AGRICULTURAL MACHINERY,
IMPROVED PLOWS, &c.



The subscribers avail themselves of this medium to tender their thanks to their friends and the public generally, for their liberal patronage, and in support of their claims to its continuance, they offer to supply a general and complete assortment of the best AGRICULTURAL IMPLEMENTS and SEEDS, that can be procured—and upon terms which furnish a reasonable and liberal guarantee of satisfaction to purchasers.

sep 1 R. SINCLAIR, JR. & CO.

MANAGER WANTED.—One who can be well recommended, and accustomed to managing slaves, is wanted to take charge of an estate on the Eastern Shore of Va.—As the owner is much absent, he must be a first rate man, and capable of producing testimonials to that effect. Apply (if by letter post paid) to the editor of the Am. Farmer. dec. 1, 1t

FOR SALE.—An IMPORTED AYRSHIRE BULL, nearly 7 years old, a remarkably fine animal,—the present owner having obtained a fresh cows, has no further use for him, will sell him for $50, deliverable in this city, if applied for before the 1st of January.

Also, a Bull calf, a fine animal, dropped the 3d of Nov. got by the above bull out of an imported Cow. Having been taken from the dam at 3 days old, can be removed at once.—$20 will be taken for him, if purchased before the 1st of January; if not then sold, his price will be increased. Apply to S. SANDS, office of the Farmer. dec. 1

JAVA FOWLS, $3.50 per pair; Turkey Fowls, $3.50 per pair; mixture of Turkey and Java, breeds, $3.50; Cocks of either breed, $1.75; Poland Fowls, $3.50.

A few pairs of the above for sale—appiy at this office. dc. 1

ROSENDALE CEMENT.—The undersigned, offer for sale this superior Cement. And are in possession of certificates from the most celebrated engineers in the United States, as to the superiority of this, over any other now manufactured, and with confidence offer it to those who may require it. GUEST & GILMOR,

Sole Agents for this city, No. 2 O'Donnell's Wharf.

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